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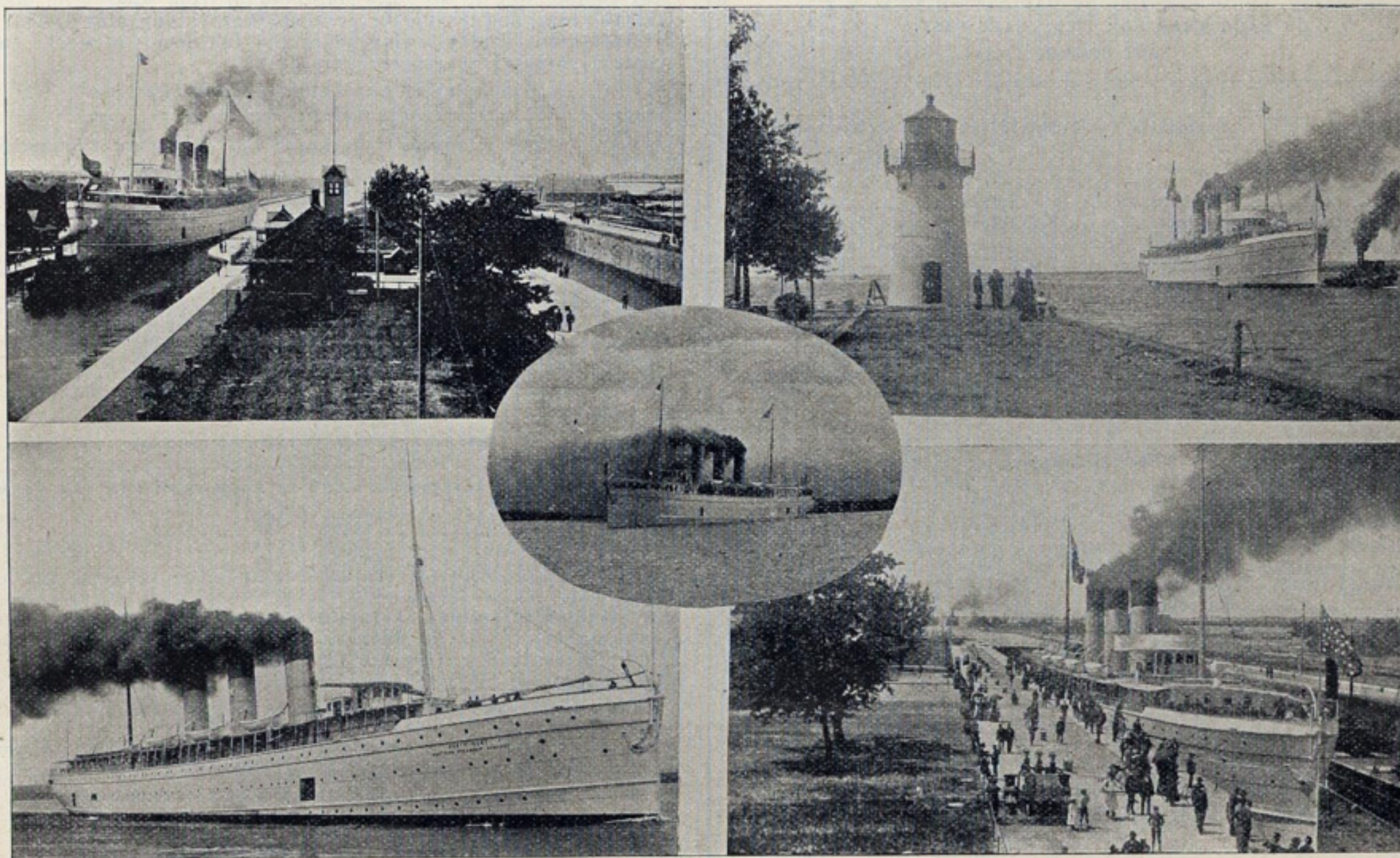
New Ship Yard Contracts.

The Bertram Engine Works Co. of Toronto has just closed a contract for the building of a grain carrier for the St. Lawrence & Chicago Steam Navigation Co., Limited, of Toronto, the former owners of the steamer Rosedale. The new steamer is to be full Welland canal size, and to have all the latest improvements known to make it a thorough business vessel for the grain trade. Dimensions of hull will be 256 feet over all, 43 feet beam and 24 feet deep. Engines will be triple expansion with cylinders of 17, 28 and 47 inches diameter and 36-inch stroke. The boiler will be of Scotch type, 13 feet 4 inches diameter and 11 feet 6 inches over heads, built for 170 pounds steam pressure, and to be fitted with Howden hot draft. A small donkey boiler, also of Scotch type, will be furnished. It is understood that this steamer will cost \$125,000. Canadian papers refer to rumors of negotiations for removal of the Bertram works from Toronto to Kingston, but officers of the company have said nothing on the subject. It is claimed that arrangements for dry dock facilities in connection with the works could be made in Kingston and that there is

Deep Water in Detroit River.

A correspondent at Amherstburg says: "It is thought that the wheel lost a few days ago by the steamer Northern King of Buffalo was dropped nearly abreast of the rear range tower of the Lime-Kiln crossing range, or just as the vessel was about to turn onto the Bois Blanc island range. In this vicinity the depth of water in the channel is from 24 to 26 feet, and it is not thought that the wheel is an obstruction. It will very probably be found by the dredges at work in this vicinity."

"As a result of dredging operations in the Lime-Kiln cut, from which some 800 large rocks have been removed within the past month, there is now full 19 feet of water in that channel. Although vessels are coming from Lake Superior with light loads, on account of lower water than last year at Ashland, Duluth and other places, the stage of water in the Detroit river is about 2 inches better than it was a year ago. In this vicinity the actual stage is only 2 inches below the government standard, which is much better than in previous years, and it may be said that there is full 18 feet of water everywhere from above Ballard's reef to the mouth of the



Views of the Northern Line passenger ships at points on their Lake Route.
(From engravings prepared for the Blue Book of American Shipping, 1898 issue.)

not water frontage enough at the Toronto plant. The purchase of the Kingston Locomotive Works is said to be involved in the proposed change.

Officials of the Globe Iron Works Co. have for some reason withheld details regarding new orders which they have received of late, but from the best information that can be secured it is more than probable that they will build the seagoing tug that is to replace at New Orleans the R. G. Wilmot, recently sold to the government, and that they will also build for Mr. C. W. Harkness of Cleveland the steel steam yacht referred to several days ago. It is understood that Mr. Harkness has sold his yacht Peerless to the government and has ordered the new vessel to replace her. The new yacht will undoubtedly be the finest pleasure craft ever built on the lakes. She will be 200 feet over all, 186 feet keel, 25 feet beam and 17 feet deep, and will have about 1,500 horse power in triple expansion engines and Scotch boilers. When locks of the St. Lawrence canals are all enlarged next year to the size of Welland locks, this yacht will pass to and from the Atlantic seaboard without difficulty.

When the war with Spain has become a matter of history, we will have on our hands a superb navy. The question arises, What use shall we make of it? With a merchant marine in keeping with the power and greatness of our country, the rightful function of our navy will be to guard and protect it on the high seas, and the flag of liberty and freedom on cruiser and merchant ship will thus be made a familiar emblem in the harbors of the globe. It is now agreed that a fighting navy we must have to compel respect abroad; it is equally palpable that a great merchant fleet we must also create if we shall assert and reflect the magnitude of our commercial power and the boundlessness of our productive resources.—Exchange.

river. Vessel owners who wish to keep within the limit will not, however, load lower than 17 feet 5 inches. Dredges are at work at Ballard's reef and a new plant from Toledo is about to begin work in the channel between Bois Blanc and Amherstburg. If the present water holds out, and if dredging operations progress satisfactorily, it will not be surprising to find vessels passing here at a draught of more than 18 feet towards the close of the season."

War Taxes.

Among the numerous stamp tax items in the war revenue bill now before the United States senate is one levying a tax of \$10 on each charter of a ship above 600 tons. A smaller tax is provided for vessels of less tonnage. Taxes are to be collected also on insurance policies, on protests, on reports of surveys, bills of lading, etc., and masters of ships in the foreign trade will find that the stamps required on arrival and clearance papers will foot up quite an item. It is provided, as the bill now stands, that no taxes on bills of lading or for reports when arriving and clearing shall be collected from ships in the coastwise trade or in the trade with British North America, but it would seem that provisions of the bill relating to taxes on charters, insurance policies and reports of insurance surveyors will apply to the lakes unless a change is made through the influence of the lake interests before the measure is finally disposed of. The government would certainly collect a very large sum of money through enforcement of the tax on charters in the coastwise trade, especially on the lakes, where hundreds of ships of more than 600 tons each carry as many as twenty to thirty cargoes in a single season.

The Cunard line, it is said, will shortly order a new steamship to cost half a million dollars.

Heavy Movement of Freight in April.

Although little in the way of commerce on Lake Superior during April has been expected in the past, this year is an exception. Reports from the canals at Sault Ste. Marie show that the freight movement in the month just passed aggregated 710,366 net tons, against only 199,503 tons in April, 1896. The principal gains are in iron ore and soft coal, as noted by the following tables:

	VESSEL PASSAGES.	REGISTERED TONS.	FREIGHT TONS.
To May 1, 1898.....	856	735,713	710,366
To May 1, 1897.....	261	249,699	199,503

MOVEMENT OF PRINCIPAL ITEMS OF FREIGHT TO AND FROM LAKE SUPERIOR.

ITEMS.	To May 1, 1898.	To May 1, 1897.
Coal, anthracite, net tons.....	3,600	16,896
Coal, bituminous, net tons.....	195,972	49,374
Iron ore, net tons.....	282,314	2,745
Wheat, bushels.....	1,910,500	2,277,571
Flour, barrels.....	232,250	161,390

REPORT OF FREIGHT AND PASSENGER TRAFFIC TO AND FROM LAKE SUPERIOR, FROM OPENING OF NAVIGATION TO MAY 1 OF EACH YEAR FOR TWO YEARS PAST.

EAST BOUND.

ITEMS.	Designation.	To May 1, 1898.	To May 1, 1897.
Copper	Net tons....	7,097	4,837
Grain, other than wheat	Bushels....	3,019,455	1,246,500
Building stone	Net tons....		
Flour	Barrels.....	232,250	161,390
Iron Ore.....	Net tons....	282,314	2,745
Iron, pig.....	Net tons....		
Lumber	M. ft. b. m.	11,919	2,110
Silver ore.....	Net tons....		
Wheat	Bushels....	1,910,500	2,277,571
Unclassified freight	Net tons....	10,780	334
Passengers.....	Number....	100	15

WEST BOUND.

Coal, anthracite.....	Net tons...	3,600	16,896
Coal, bituminous.....	Net tons ..	195,972	49,374
Flour	Barrels		
Grain	Bushels....	250	
Manufactured iron.....	Net tons...	11,403	1,403
Salt	Barrels	12,156	12,400
Unclassified freight.....	Net tons...	19,723	9,176
Passengers.....	Number ...	272	41

SUMMARY OF TOTAL FREIGHT MOVEMENT IN TONS.

	To May 1, 1898.	To May 1, 1897.
West bound freight of all kinds, net tons	233,800	78,709
East bound freight of all kinds, net tons	476,566	120,794
	710,366	199,503

Ore Shipping Docks at Two Harbors.

About June 1 a new ore dock, known as dock No. 2, will be in service at Two Harbors, the ore shipping port of the Duluth & Iron Range R. R. Co. This dock is the fifth at Two Harbors, and will increase the storage capacity of docks at that port to 138,600 gross tons. The total length of these docks is 4,860 feet and the number of pockets 774. The new dock is one of the largest in the Lake Superior region. The height from mean stage of water to the top of the dock is 57 feet and the length 1,248 feet. The dock contains 208 pockets of 41,600 tons storage capacity. The approximate cost of the five docks at Two Harbors is \$1,200,000. Particulars of all of the docks will be found in the following table:

STATEMENT SHOWING SIZE OF ORE DOCKS AT TWO HARBORS, MINN.

Dock No.	Height from water to top of dock.	Length of dock.	No. of pockets.	No. of rails on each side.	Capacity gross tons.
1	45 feet 6 inches.....	1056	140	3	18,000
2	57 feet.....	1248	208	4	41,600
3	51 feet 6 inches.....	540	90	4	16,000
4	51 feet 6 inches.....	1008	168	4	30,000
5	54 feet.....	1008	168	4	33,000
Total		4860	774		138,600

It may be noted, with reference to the heading "number of rails on each side," that the three rails provide two tracks and four rails three tracks. In the latter case two tracks on each side of the dock can be used at the same time.

William H. Jaques, president of the Holland Torpedo Boat Co., announces the removal of his office from No. 11 Broadway to No. 141 Broadway, New York.

More than Ten Million Tons.

IRON ORE MOVED FROM LAKE ERIE DOCKS TO FURNACES DURING THE PAST YEAR—STOCKS ON DOCK ARE STILL QUITE HEAVY.

Although shipments of ore from Lake Erie docks to furnaces during the year ending May 1 exceed the shipments of any previous year by nearly 1,500,000 tons, stocks on dock are still somewhat larger than was expected. Reports from all Lake Erie ports to the Marine Review show that on the 1st inst. the stocks on dock aggregated 3,167,915 gross tons, against 3,256,497 tons on the same date a year ago. Lighter stocks were expected this year, as the surplus last spring was unusually large. It must be noted, however, that the stocks of last spring were left over from a production of less than 10,000,000 tons in 1896, while the present surplus is from a production of more than 12,000,000 tons in 1897. The encouraging feature of these reports to both ore dealers and vessel men is the consumption during the year ending May 1, which amounts to 10,209,488 gross tons. If it were possible to add to this definite figures regarding ore used by furnaces and steel works in the Chicago district it would undoubtedly be found that the consumption as a whole is well up to last year's production of 12,469,638 tons.

At the close of navigation on Dec. 1, 1897, the stocks on dock amounted to 5,923,755 tons. If we deduct from this 3,167,915 tons, the amount now on dock, we find that shipments to furnaces from Lake Erie ports during the past winter amounted to 2,755,840 tons, which, added to 7,453,648 tons, the amount shipped to furnaces during the season of navigation in 1897, gives 10,209,488 tons as the entire consumption of ore from Lake Erie docks during the year ending May 1, 1898. During the year ending May 1, 1897, the consumption from Lake Erie docks was 6,719,633 tons, and during the previous year, ending May 1, 1896, it was 8,805,540 tons. The following tables give full details of stocks and shipments to furnaces for several years past:

IRON ORE ON LAKE ERIE DOCKS—GROSS TONS.

PORTS.	Opening of Navigation.			Close of Navigation.		
	May 1, 1898.	May 1, 1897.	May 1, 1896.	Dec. 1, 1897.	Dec. 1, 1896.	Dec. 1, 1895.
Toledo.....	71,726	66,337	10,593	194,644	115,959	113,332
Sandusky.....	48,800	48,939	8,442	84,786	59,491	34,375
Huron	143,170	162,292	55,173	230,029	200,075	101,000
Lorain	158,797	180,605	118,820	317,509	231,288	224,264
Cleveland	863,776	979,703	506,693	1,478,355	1,419,311	1,200,792
Fairport	501,592	480,984	346,847	825,312	773,905	605,470
Ashtabula	1,031,441	926,865	636,254	1,835,694	1,441,666	1,301,302
Conneaut	69,047	207,034	112,446	360,895	275,800	292,460
Erie	236,485	153,261	137,826	484,871	355,222	335,718
Buffalo	53,081	50,477	16,644	111,660	82,267	207,199
Total	3,167,915	3,256,497	1,949,698	5,923,755	4,954,984	4,415,712

IRON ORE ON LAKE ERIE DOCKS, MAY 1 OF EACH YEAR FOR TEN YEARS PAST.

Year.	Gross tons.	Year.	Gross tons.
1889	588,753	1894	2,588,370
1890	936,228	1895	2,642,890
1891	2,662,223	1896	1,949,698
1892	1,537,188	1897	3,256,497
1893	2,095,797	1898	3,167,915

IRON ORE SHIPMENTS, LAKE ERIE PORTS TO FURNACES, FULL YEARS.

Year ending	Gross tons.	Year ending	Gross tons.
May 1, 1898.....	10,209,488	May 1, 1895.....	6,296,215
May 1, 1897.....	6,719,633	May 1, 1894.....	4,870,488
May 1, 1896.....	8,805,510	May 1, 1893.....	6,102,125

IRON ORE SHIPMENTS, LAKE ERIE PORTS TO FURNACES, DURING WINTER PERIOD, DEC. 1 TO MAY 1.

Winter of	Gross tons.	Winter of	Gross tons.
1897-98.....	2,755,840	1894-95.....	2,191,267
1896-97.....	1,698,487	1893-94.....	1,512,340
1895-96.....	2,466,014	1892-93.....	2,063,614

Damages for a Shipmaster.

The court of appeals of the District of Columbia held, in the recent case of the Norfolk & Washington Steamboat Co. vs. Davis, that charges contained in a letter written by the general superintendent of a steamboat company, to the effect that the captain of one of its steamers, who had been discharged from its service, was grossly wanting in efficiency and capacity, were libellous; that where such a letter is written within the scope of his authority as superintendent, or his act is subsequently ratified by the company, the company will be liable for the publication, and that such a letter is not constituted a privileged communication merely by the fact that it was in response to a letter from the friend of the discharged captain, who had requested his reinstatement and who had recommended him for another position. The court said that whether or not a communication is privileged is a question of law for the court to determine, and that a communication is only privileged within the rule when made in good faith in answer to one having an interest in the information sought, but that it will be privileged even if voluntary when the party to whom it is made has an interest in it, and the party making it stands in such relation to him as to make it a reasonable social duty, or at least proper to give the information as a means of guarding the person receiving it from an act or dealing that might be prejudicial to him.

"Fatigue of Metal in Wrought Iron and Steel Forgings" is the title of another interesting paper recently prepared by Mr. H. F. J. Porter of the Bethlehem Iron Co., South Bethlehem, Pa., and printed in the Journal of the Franklin Institute. Reprints of the paper in pamphlet form may be had from the Bethlehem company.

The Berlin Iron Bridge Co. of East Berlin, Conn., has on the main floor of the electrical exhibition now open at Madison Square Garden, New York, a steel building showing the construction of their patent anti-condensation corrugated iron roof covering, which is absolutely fireproof and is guaranteed not to drip or condense moisture on the underside.

Cost of Transportation on the Lakes.

IN 1897 THE MILE-TON RATE WAS REDUCED TO 80-HUNDREDTHS OF A MILL.—
INTERESTING REPORT FROM ST. MARY'S FALLS CANAL OFFICIALS.

Again the cost of moving a ton of freight one mile on the lakes, as indicated by the St. Mary's Falls canal reports, prepared under the direction of Col. G. J. Lydecker of the army engineer corps, has been materially reduced. The office force of the United States canal at Sault Ste. Marie has finished the report known as the "Mile-Ton Report." This report enters into numerous details regarding the traffic of both canals, Canadian and United States, and will be submitted to congress shortly, through the secretary of war. It is found that the value of all freight moved through the canals in 1897 (18,982,755 net tons) was \$218,235,927.77, against a total value of \$159,575,129.43 for 16,239,061 net tons of freight in 1896; and the cost per ton per mile in 1897 was 83-hundredths of a mill, against 99-hundredths in 1896. The increase in value of freight in 1897 is \$58,660,798.34.

An exchange of official reports with Canadian canal officials makes this report a complete summary of commerce to and from Lake Superior, as was the case before the Canadian canal was built. Where Canadian commerce is mentioned in the report, it means freight carried in Canadian bottoms, and has no reference to the canal through which the vessel passed or through which the freight was transported.

TABLE SHOWING THE ESTIMATED VALUE OF FREIGHT MOVED THROUGH ST. MARY'S FALLS CANAL, MICHIGAN, AND SAULT STE. MARIE CANAL, ONTARIO, FOR THE SEASON OF 1897.

ITEMS.	Designation.	Quantity.	Price per unit.	Valuation.
Coal, anthracite.....	Net tons.....	536,199	\$ 5.50	\$ 2,949,094.50
Coal, bituminous.....	Net tons.....	2,502,973	2.60	6,507,729.80
Flour.....	Barrels.....	8,921,143	4.50	40,145,143.50
Wheat.....	Bushels.....	55,924,302	.87	48,654,142.74
Grain, (other than wheat).....	Bushels.....	24,889,688	.46	11,449,256.48
Manufactured iron.....	Net tons.....	121,848	50.00	6,092,400.00
Pig iron.....	Net tons.....	13,316	13.25	176,437.00
Salt.....	Barrels.....	285,449	.75	214,086.75
Copper.....	Net tons.....	122,324	200.00	24,464,800.00
Iron ore.....	Net tons.....	10,633,715	3.00	31,901,145.00
Lumber.....	M. ft. B. M.....	805,612	13.50	10,875,762.00
Silver ore.....	Net tons.....	5	112.00	560.00
Building stone.....	Net tons.....	6,249	10.00	62,490.00
Unclassified freight.....	Net tons.....	579,048	60.00	34,742,880.00
				\$218,235,927.77

Average value per ton of freight for season of 1896—\$12.02.

Average value per ton of freight for season of 1897—\$11.50.

Relative values of the several principal commodities are shown in the following table:

	Per cent.
Coal.....	4.3
Cereals.....	45.9
Iron.....	17.5
Copper.....	11.2
Lumber.....	5
All other products.....	16.1

In this summary both hard and soft coal are included under the head of "coal;" wheat, flour, grain other than wheat, under the head of "cereals;" iron ore, manufactured and pig iron, under the head of "iron." It will be observed that the "cereals" are far the most important in valuation, amounting to 45.9 per cent. of the whole. This is followed by "iron" with a valuation of 17.5 per cent.; copper, 11.2 per cent.; lumber, 5 per cent., and coal 4.3 per cent. It will thus be seen that the five items enumerated above make up 83.9 per cent. of the entire value of freight moved through the canals.

COST OF CARRYING FREIGHT TRANSPORTED THROUGH ST. MARY'S FALLS CANAL, MICHIGAN AND SAULT STE. MARIE CANAL, ONTARIO.

ITEMS.	Unit.	Quantity.	Price per Unit.	Amount.
Coal.....	Net tons.....	3,039,172	\$.30	\$ 911,751.60
Flour.....	Barrels.....	8,921,143	.10	892,114.30
Wheat.....	Bushels.....	55,924,302	.017-10	950,713.13
Grain (other than wheat).....	Bushels.....	24,889,688	.02	497,793.76
Manufactured Iron.....	Net tons.....	121,848	1.40	170,587.20
Pig Iron.....	Net tons.....	13,316	1.05	13,981.80
Salt.....	Barrels.....	285,449	.15	42,817.35
Copper.....	Net tons.....	122,324	1.95	238,531.80
Iron Ore.....	Net tons.....	10,633,715	.65	6,911,914.75
Lumber.....	M. ft. B. M.....	805,612	1.55	1,248,698.60
Silver Ore and Bullion.....	Net tons.....	5	2.33	11.65
Building Stone.....	Net tons.....	6,249	1.50	9,373.50
Miscellaneous Mdse.....	Net tons.....	579,048	2.30	1,331,810.40
TOTAL COST.....				\$ 13,220,099.84

Tons are net tons of 2,000 pounds.

By dividing the total amount of freight paid, \$13,220,099.84, by the total mile-tons, 15,969,393.576, it is found that the cost per ton per mile is 83-100 of a mill. The average distance freight was carried was 841.3 miles, which is 4.9 miles more than in 1896.

The total cost of freight transportation in 1896 was \$13,511,615.80, and in 1897, \$13,220,099.84. The nature of the data from which the preceding results were found is such that it includes the cost of loading and unloading. Other results were obtained as follows:

Total mile-tons.....	15,969,393.576
Total freight paid.....	\$13,220,099.84
Cost per mile per ton.....	83-100 mill.
Average distance freight was carried.....	841.3 miles.
Average cost per ton for carrying freight.....	69.6 cents.

The number of registered crafts which used the canal during the season was:

Steamers.....	525
Sails.....	323

Total..... 848

AMERICAN CRAFT.

CLASS.	No.	Registered tonnage.	Freight tonnage.	Passengers.	Valuation.
Steamers.....	484	506,487	12,698,150	22,176	\$33,963,100
Sails.....	303	250,651	5,702,610	51	8,412,600
Total.....	787	757,138	18,400,760	22,227	\$42,375,700

CANADIAN CRAFT.

CLASS.	No.	Registered tonnage.	Freight tonnage.	Passengers.	Valuation.
Steamers.....	41	21,377	465,517	17,986	\$1,793,100
Sails.....	20	10,424	87,716	208,300
Total.....	61	31,801	553,233	17,986	\$2,001,400

The total passages by unregistered crafts when carrying freight was 377. The freight carried by American unregistered craft amounted to 9,560 tons in 185 passages, making an average of a trifle more than 51 tons of freight per passage. The freight carried by Canadian unregistered craft amounted to 19,202 tons in 192 passages, making an average of a trifle more than 100 tons of freight per passage.

SUMMARY.

Total number of registered craft.....	848
Total passages by unregistered craft while carrying freight....	377
Total tons of freight carried by registered craft.....	18,953,993
Total tons of freight carried by unregistered craft.....	28,762
Total passengers.....	40,213
Total valuation of crafts registered.....	\$44,377,100

The Canadian freight amounted to 572,435 tons, which is 3 per cent. of the total freight for the season.

The passages for the season numbered 17,171, and 1,454 of these were by ninety crafts under 100 tons register. The aggregate registered tonnage of these ninety vessels was 2,599 tons, and their average tonnage 29 tons. The freight carried by these crafts during the season amounted to only 2,181 tons.

From the column of largest cargoes it is ascertained that there were ninety-six steamers that carried in their largest load 2,000 tons and upwards; that these cargoes aggregated 244,061 tons and averaged 2,542 tons; there were eighty-three steamers that carried in their largest load 3,000 tons and upwards, aggregating 274,377 tons, and averaging 3,306 tons; twenty-three steamers that carried in their largest load 4,000 tons and upwards, aggregating 103,466 tons, and averaging 4,499 tons; twelve steamers that carried in their largest load 5,000 tons and upwards, aggregating 67,126 tons, and averaging 5,594 tons; and six steamers that carried in their largest load 6,000 tons and upwards, aggregating 36,428 tons, and averaging 6,071 tons. There were thirty-seven sail vessels that carried 2,000 tons and upwards, aggregating 90,597 tons, and averaging 2,449 tons; twenty-eight sail vessels that carried 3,000 tons and upwards, aggregating 100,616 tons, and averaging 3,593 tons; three sail vessels that carried 4,000 tons and upwards, aggregating 12,572 tons and averaging 4,191 tons; sixteen sail vessels that carried 5,000 tons and upwards, aggregating 87,462 tons, and averaging 5,466 tons; and two sail vessels that carried 6,000 tons and upwards, aggregating 12,348 tons and averaging 6,174 tons.

The greatest number of miles run during the season is to the credit of the steamer Harlem of the Western Transit Co.'s fleet, Buffalo, amounting to 49,853 miles. The greatest amount of freight carried by a single vessel during the season is to the credit of the steamer Andrew Carnegie of the Wilson Transit Co.'s fleet, Cleveland, and amounts to 130,956 net tons. The mile-ton record for the season is also to the credit of the Carnegie, and amounted to 114,571,524. The largest single cargo carried by a steamer during the season is to the credit of the Empire City, Zenith Transportation Co. of Duluth, and amounted to 6,171 net tons. The largest single cargo carried by a sail vessel during the season is to the credit of the tow barge Amazon of the Corrigan fleet, Cleveland, and amounted to 6,244 net tons.

The United States canal was open to navigation during the season 234 days, and the Canadian canal 238 days.

The amount of freight carried to and from Lake Superior during the season of 1897 was 18,982,755 net tons, which is an increase of 2,743,694 net tons, or 11 per cent., in comparison with the season of 1896. Vessels were delayed at the canal during the season 7,396 hours and 20 minutes, or an average of 34 minutes and 38 seconds.

The records show that vessels were aground on the mitre sill of the movable dam for a total of 42 hours during the season.

The railway swing bridge across the canal was delayed by boats 2 hours and 13 minutes, and the boats were delayed by the bridge only 5 minutes.

The canal postoffice handled 81,872 pieces of mail, consisting of 71,208 letters, 4,276 postal cards, 6,048 newspapers and 340 parcels. In addition to the above, 605 pieces were returned to the city postoffice as "uncalled for," and 1,355 pieces were forwarded to new addresses.

Grand Marais Harbor, Lake Superior.

In a letter to Geo. L. McCurdy of Chicago, Capt. W. E. Rice of the steamer Rhoda Stewart makes the following report regarding Grand Marais harbor, Lake Superior:

"A bar with but 12 feet of water over it has formed directly across the entrance to this harbor and about 100 feet outside the west pier. There is also a bar between the piers that is covered by only 13 feet of water. This obstruction is about 150 feet inside the end of the east pier and extends across two-thirds of the distance to the west pier. By having the light-house bear S. W. ½ W., and running on that course until the piers open up, 13 feet may be carried. There is good water at the ends of both piers—certainly 15 or 16 feet at the east pier and a little less at the west pier."

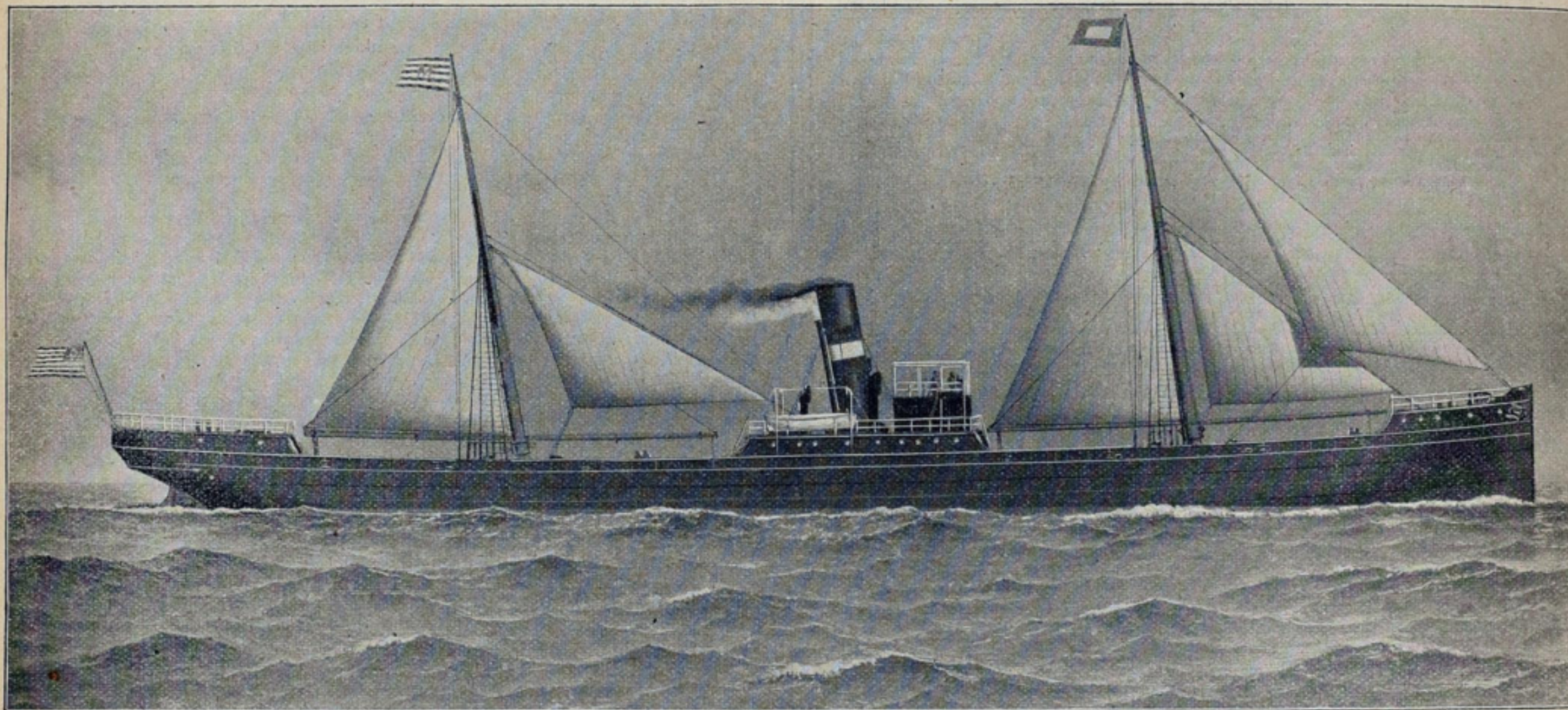
A very neat pamphlet of some thirty pages dealing with lightning arresters as applied for protection to electric circuits has just been issued by the General Electric Co., Schenectady, N. Y.

First American Tramp Steamer.

The illustration on this page represents the first tramp steamer of the United States. English ships of the tramp type are found in all parts of the world. A New York firm, Miller, Bull & Knowlton, are to try the experiment of building and operating a ship of this kind under the American flag. In providing funds for the building of the ship they also adopted the English method of seeking subscriptions to shares of stock by public solicitation. The vessel is building at the yard of the Bath Iron Works, Bath, Me. She will be of about 2,600 tons gross and 1,750 net tons register. Dimensions are: Length over all, 302 feet; length on water line, 290 feet; beam, 42 feet; molded depth, 25 feet 8 inches. Other particulars are: Four hatches, 26 by 14 feet, for loading and discharging cargo rapidly; caulked wood between decks laid throughout; lower hold, 13 feet 2 inches in depth, and between decks 8 feet 6 inches; mean draft, fully loaded, 18 feet 9 inches to 19 feet 3 inches; dead weight capacity, 3,800 tons; cubic capacity, 169,300 feet for bales or general cargo, and 176,500 feet for grain; bunker capacity, 450 tons. The main engines will be triple expansion, surface condensing, with cylinders of 22.34 and 55 inches diameter by 36-inch stroke. Boilers will be of Scotch type, 12 feet 5 inches by 12 feet 3 inches, allowed 165 pounds working pressure. The cellular bottom of the ship, divided into four compartments, and all provided with suitable pumping connections, will give capacity for 725 tons of water ballast. Among other modern machines to be provided on the vessel are a Williamson steam steerer; Hyde windlass; four hoisting en-

Outlook in Steel and Iron.

Foreign business in iron and steel products is suffering on account of the war, and this fact may contribute something to stock accumulations. An Atlantic rate of 16 shillings and upward, or nearly three times that under which much of our iron and steel has gone abroad, is certain to be prohibitive. It is significant that British inquiries for plates should come in the midst of the good demand at this side. It would seem that the requirements on both sides of the water are exceptional. The cutting off of their export trade has not been a serious matter as yet for Alabama furnaces. Most of them are booked for months ahead on home business and full shipments are being taken for the most part. How far the restrictive movement contemplated by the plans of the National Association of Non-Bessemer Pig Iron Manufacturers will become a factor in prices cannot be told at once. It will take a little time to show whether producers will be so ready to pay the tonnage tax and assent to all the features of the organization as they were to be represented at a preliminary meeting for conference. The \$10 furnace price of the Bessemer pig iron producers of the central west has been established by valley sales of several thousand tons in the past week. At Pittsburg considerable business has been done, but the iron has been purchased from dealers at figures 25 to 30 cents below the producers' basis. It is estimated that the banking of certain Mahoning valley furnaces, which has already begun, will produce an aggregate curtailment in the next ten or twelve weeks, equal to a year's output of an average valley furnace, or about 85,000



FIRST AMERICAN TRAMP STEAMER—UNDER CONSTRUCTION AT BATH IRON WORKS, BATH, ME.

gines and connections; a donkey boiler capable of driving all winches at once; double derricks, etc. The vessel is to be completed in July next and is to have the highest class for vessels of her kind at Lloyds and in the Record of American & Foreign Shipping.

Grosse Point Lights.

The complaint of vessel masters about the present system of lights at Grosse point cut, Lake St. Clair, is the old complaint about ranges. Instead of the channel lights of last season the captains must depend mainly on new range lights below the cut, which are probably seven miles from the head of the channel. These ranges are often obscured by smoke and thick weather, and there is always the difficulty of the ranges being shut out from a descending vessel by a vessel bound up the channel. Then, too, there is general complaint against range lights in narrow channels of the lakes when they can be avoided, as the disposition among all vessel masters is to hold their ships "dead on the ranges," as the term goes, when they can do so. Complaint about the conditions at Grosse point has increased of late and there is universal demand for a return to last year's lights in preference to the present system.

A modification of a mining lease executed by W. C. Yawkey of Detroit to the Franklin Iron Mining Co., covering lands on the Mesabi range, has been filed in the office of the register of deeds at Duluth. The changes provided for are that the royalty is reduced after May 1 from 35 to 21 cents a ton, and the minimum output will be 50,000 tons instead of 100,000 tons. It is provided that in case ore sells for more than \$2.75 per ton, delivered in Cleveland, the royalty will increase 3-20 of a cent for every cent over the above price.

A note from Consul-General Goodnow at Shanghai says that Capt. Watson W. Rich, late chief engineer of the "Soo" railway and well known in the Lake Superior country, has been appointed consulting engineer to the Chinese railway administration, with headquarters at Shanghai. Capt. Rich will be in charge of all railway building in China, under the immediate direction of Sheng Tajen, director-general of railways.

tons. Meantime it is evident that if the present output of steel is to be maintained through the second quarter considerable purchases of Bessemer pig will be made. But just as the pig iron price is becoming established at a figure carrying a profit, billets have weakened and the spread that has been for a considerable period strongly in the steel makers' favor swings closer to normal. The sources of finished material demand, leaving structural steel out of the account, indicate that a season of fairly steady operation is ahead of the mills. Railroad, agricultural, government and ship yard requirements are not only a tremendous present factor, but promise to be steady consumers for months to come. The agricultural demand resulting from the farmer's prosperity of last year seems only fairly under way, and all calculations of implement makers for the coming year are much beyond those for 1898. In many cases not only will stocks be completely cleaned up this season, but shipments from works will fall short of filling orders. In several finished lines there is a noticeable shortage of new business, and in the case of sheets and bars a weaker feeling.—Iron Trade Review.

Not a Blake Pump.

Editor of Marine Review:—As you no doubt noticed, the New York Herald of Monday, the 9th inst., mentioned the fact that Commodore Dewey was delayed two days in bombarding the Manila fleet on account of an accident to one of the pumps of the United States gunboat Raleigh. Many of our friends and others have inferred that it was one of our pumps that caused the trouble, on account of our having fitted out so many of the United States naval vessels with steam pumps. The object of this letter is to say that the Raleigh has not, in her pump equipment, a single machine of our make.

THE GEO. F. BLAKE MFG. CO.,
F. M. Wheeler, Mngr., Marine Dept.

New York, May 10, 1898.

In purchasing state room tickets at the dock ticket offices of the Detroit & Cleveland Navigation Co., passengers are now given the state room key, thus avoiding the delay of exchanging tickets and obtaining the key from the purser on the steamer.

Ships Purchased by the Government.

Until another appropriation is made by the government for the use of the Auxiliary Board of Naval Cruisers, it is not probable that any more vessels will be purchased by the board. A short list of recent purchases, supplemental to the one printed in the Review of last week, is given herewith. The Buffalo yacht Enquirer is included in this list, as it is quite certain that in accordance with arrangements made before she left Buffalo, several days ago, she will be taken by the government upon arrival in New York. The tug Wm. H. Brown, built last fall by F. W. Wheeler & Co. for Wm. H. Brown of Pittsburg, is another lake vessel to be added to the naval auxiliary fleet. She was held in Canada during the past winter by the closing of the St. Lawrence canals. It is understood that Mr. F. W. Wheeler of West Bay City conducted the negotiations that resulted in the sale of this tug, as she was still in the hands of the builders.

SHIPS PURCHASED BY THE GOVERNMENT.

Name when purchased.	Name in Navy.	Purchased from.	Type before purchase.	To be used as.	Gross tonnage.
Enquirer.....		W. J. Conners.....	Yacht.....	Torpedo boat....	140
Illinois.....		International Nav. Co.	Freight stmr....	Refrig. ship....	3163
John Dwight.....	Pawnee.....		Steam lighter....	Steam lighter....	
Hesperia.....			Tug.....	Scout boat.....	
Paoli.....		Staples Coal Co.....	Tug.....		330
King Thor.....		J. Holman, England..	Collier.....	Transport.....	3,000
Hesperian.....			Collier.....	Transport.....	3000
Alberanda.....			Collier.....	Transport.....	3000
W. H. Brown.....		F. W. Wheeler & Co....	Tug.....	Tug.....	300

In arrangements that are being made for the movement of troops to Cuba, the government is not purchasing vessels, but has chartered quite a large fleet. Among them are the Ward line steamships City of Washington, Seneca, Santiago, Saratoga and Seguranca; the Clyde liners Cherokee and Iroquois, and the Comal, Alamo, Gussie, Whitney, Allegheny, Berkshire, Miller, Florida, Gayette and Miami.

When the late T. P. Handy was a Shipowner.

Editor Marine Review:—I must reprove you in a friendly way. You did not refer to the death of Truman P. Handy. Capt. Coe wrote me about Mr. Handy's death from Cleveland. I wish I could pay a just tribute to his memory. He was loved by all who knew him. Mr. Handy was the owner of a large fleet of vessels in the fifties and sixties. The firm was Handy, Warner & Co., and Mr. Ralph H. Harmon, now president of the Cleveland City Forge & Iron Co., was the company. I was employed by them for twenty-three years. Capt. A. R. Manning of Cleveland also sailed for Mr. Handy. I was employed by Jesse Hoyt when Handy, Warner & Co. offered me an increase of \$500, and, of course, I accepted. Capt. S. R. Kirby took my place and went to Saginaw in 1854. I looked after the building of vessels for Mr. Handy, taking off his hands all work of this kind. He used me kindly all the time, and the same was true of his dealings with everybody in his employ. I mourn his death but remember with pride and pleasure his sterling qualities.

In 1858 I took his schooner John R. Warner to Liverpool, laden with staves and black walnut lumber. The deck load was 5 feet high and we met with a gale but did not lose a stave. Mr. Handy met us on the other side, having taken passage on a steamer. We came to anchor in the Mersey and remained there for several days, but could not sell the staves at a satisfactory price. In the meantime, I had been invited ashore by Mr. Handy, who was at the Waterloo hotel, and spent several days sight-seeing with him. At St. George hall we found an organ that required a fifteen-horse-power engine for blowing purposes, and I remember well how pleased Mr. Handy was when I asked the operator to play the "Star Spangled Banner," and he did; also a few strains of "Hail Columbia!" We went to Scotland and found sale for the cargo at Greenock, the staves bringing \$100 per thousand. Mr. Handy had two other vessels, the R. H. Harmon and D. B. Sexton, on the other side, at the time. He sold the Sexton. The men who sailed for him are all dead now excepting Capt. A. R. Manning and myself.

Sombra, Ont., May 10, 1898.

CHARLES GALE.

Canadian-Atlantic Service.

A dispatch from Ottawa regarding Canada's new fast Atlantic steamship service says: "A year's extension of time has been given to the contractors, Petersen & Tate of New Castle, England. A new contract was entered into by the government on April 23 which materially alters the understanding ratified last session. Under the former contract the Petersens agreed to supply four steamships of 10,000 tons burthen each, and capable of steaming 21 knots. Two of these were to be put upon the route on May 31, 1899, and give a fortnightly service, and two more on the 1st of May, 1900, from which date there was to be a weekly service. The contractors contended that by reason of the strike in the engineering trade they are entitled to an extension of time allowed by the original agreement for the commencement of the service. The government, while not admitting that they have been hindered, have agreed in a supplemental contract that the time given for inaugurating the service shall begin on May 1, 1900, when all four steamers are to be ready to go on the route and give a weekly service.

The new contract requires Petersen & Tate to have the steamship company incorporated by May 30, 1898, with a subscribed capital of \$6,250,000, to have contracts signed with ship builders at that date for the four steamships and to have two of the vessels then substantially under construction. The new contract names Wednesday as the day of the weekly sailing from Great Britain and Saturday as the day of sailing from Canada. It is contended that the maximum draft of the steamers may exceed the 25 feet 6 inches named in the first contract. Provisions may be made for calling at an Irish point by giving the company an additional subsidy. One of the four steamers may be used as a reserve vessel for extra sailings. The deposit of \$50,000 is to be retained by the government and the guarantee of \$50,000 by the Northeastern bank is to be resumed and made to cover the new terms. A permanent mail room must be provided in each vessel. The contract will be submitted to parliament for ratification in a few days.

Around the Lakes.

Tonnage of the new Davidson steamer Amazonas is 2,228.63 gross and 1,930.93 net.

A small steam vessel owned at Port Townsend, Wash., has been named Gov. Pingree.

The Chicago fire boat contract has not as yet been placed. Labor union leaders are trying to keep the work of building the vessel in Chicago.

At Toledo, Wednesday, the steamer Grandon was sold to Freyensee & Hass for \$2,500. She will run between Put-in-Bay and the Middle Bass island this season.

Recent improvements in the Craig ship yard at Toledo admit of more rapid handling of material. These works, although not among the largest on the lakes, are economically conducted.

For eight or ten days past the stage of water in channels between Bois Blanc island and Amherstburg, Detroit river, as reported by Capt. Andrew Hacket of Bois Blanc island, has been full 18 feet.

Boats drawing 17 feet to 17 feet 3 inches are said to have struck at Vidal shoal, about 1½ miles above the canal in the Sault river. The attention of government engineers will be called to the condition of the channel in this vicinity.

Orinoco is the name selected for the second new wooden steamer about to leave the Davidson ship yard, West Bay City. This vessel will be ready for service in about a week, and one of the two new schooners at the same yard will be launched in about two weeks.

At the west ship yard of the Milwaukee Dry Dock Co., the barge Sidney O. Neff is being converted into a steam vessel. S. F. Holge & Co. of Detroit are building the engine, a fore-and-aft compound, with cylinders of 15 and 30 inches by 28-inch stroke. The boiler will be built at Ferrysburg, Mich.

The wooden steamer Isaac Lincoln, built by Alex. Anderson of Marine City, was launched on Tuesday last. She will be owned by A. F. Price of Fremont, O., and is designed to carry lumber up a shallow river from Lake Erie to Fremont. She is 144 feet over all, 30 feet beam and 9 feet 2 inches depth.

According to his contract with the underwriters regarding the release of the wooden steamer J. H. Outhwaite and consort H. A. Barr, ashore at Presque Isle, Lake Huron, Capt. James Reid is to receive \$7,500 for the Barr and one-third of the appraised value of the Outhwaite when delivered in Detroit. If he fails to release the vessels he gets nothing.

An obstruction at the mouth of the old river bed in Cleveland harbor is liable to cause considerable damage to ore and coal carriers entering that channel if it is not speedily removed. The Yakima of the Wilson line will probably have quite a repair bill to pay as the result of injuries sustained while entering the old river bed, a few days ago.

A bill has been passed in the house of representatives authorizing the light-house board to establish a steam fog whistle at the entrance to Muskegon harbor. No amount was specified in the bill as to the limit of cost, the money for which is to be taken from the general fund at the disposition of the board. Representative Bishop says the board intends to remove the light-house from its present position and erect it at the end of the pier 1,000 feet away, and that the total cost of the work is estimated at \$4,000 to \$4,500.

Mr. Carl L. Holmer, who has been in charge of hull designs at the works of the Cleveland Ship Building Co., has gone to Bergen, Norway, where he will be connected with a ship building concern that offered him special inducements to leave this country. He will visit ship yards of England and the Clyde on his way to Norway. Mr. F. J. Trist, who has been employed as assistant to Mr. Holmer, will succeed him. Mr. W. O. Root, designing engineer with the Cleveland company, has also taken up a new position. He goes to the Chicago Ship Building Co. as assistant to Henry Penton.

James Davidson of West Bay City began a possessory action in the United States circuit court at Detroit Tuesday to recover the two light-draft barges, Mikado and Tycoon, now operated by the Michigan & Ohio Car Ferry Co. on the route between Detroit and Sandusky. The two boats were libeled later and taken possession of by the United States marshal. E. H. Moerton, president of the car ferry company, says that the suit is prompted by railroad officials, who are trying to drive the company out of business. The contract price in the purchase of the barges from Davidson was \$16,000, of which \$2,000 has been paid. Moerton claims that on arrival of the boats at Detroit he found they would not fit the Grand Trunk slip, and that he had to pay \$2,449 to alter them, at the same time notifying Davidson that he would hold the latter responsible for the amount. Moerton claims, furthermore, that Davidson realized that the company would sue him for damages in failure to fit out the boats properly. The ferry company has filed a cross-libel.

The John A. Roebling's Sons Co., world-famed as the builders of Brooklyn bridge, have just completed a telegraphic cable of twenty-nine miles length for the Western Union Telegraph Co., to be used between Port Angeles, Puget sound, and Victoria. The most notable fact regarding the cable is that in its entire length there is but one splice, one section being twenty miles in length and the other nine. Its weight is 421,080 pounds, and six cars were required in moving it. The greatest care was exercised during its manufacture. An electrical current was constantly passing through it and a Western Union expert ever on the ground to detect any defect in manufacture. It was made at the rate of a mile a day. A number of steel towing hawsers for lake vessels have been furnished by the Roebling company. Their Cleveland office at No. 32 So. Water street is in charge of W. P. Bowman, manager.

John Birkinbine of Philadelphia has been elected president of the National Association of Manufacturers of Non-Bessemer Iron.

Three of the big American liners, St. Louis, Paris and New York, are doing scout duty for Admiral Sampson's fleet.



DEVOTED TO LAKE MARINE AND KINDRED INTERESTS.

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The books of the United States treasury department on June 30, 1897, contained the names of 3,230 vessels, of 1,410,102.60 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons, and over that amount, on the lakes on June 30, 1897, was 399, and their aggregate gross tonnage 769,366.68; the number of vessels of this class owned in all other parts of the country on the same date was 314, and their tonnage 685,709.07, so that more than half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1897, was as follows.

	Number.	Gross Tonnage.
Steam vessels	1,775	577,235.45
Sailing vessels and barges.....	1,094	894,888.87
Canal boats	361	37,978.28
Total	3,230	1,410,102.60

The gross registered tonnage of the vessels built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

Year ending June 30, 1893.....	175	99,271.24
" " " 1894.....	106	41,984.61
" " " 1895.....	93	36,352.70
" " " 1896.....	117	108,782.38
" " " 1897.....	120	116,936.98
Total	611	403,327.91

ST. MARY'S FALLS AND SUZ CANAL TRAFFIC. (From Official Reports of Canal Officers.)

	St. Mary's Falls Canals.			Suez Canal.		
	1897	1896	1895	1897	1896	1895
Number of vessel passages.....	17,171	18,615	17,956	2,986	3,409	3,434
Tonnage, net registered.....	17,619,933	17,249,418	16,806,781	7,899,374	8,600,284	8,448,383
Days of navigation.....	234	232	231	365	365	365

"The great increase in the size of lake steamers," says a correspondent of the Chicago Tribune, "has been attained by leaps and bounds. Looking over the tables published by the bureau of navigation recalls the Japanese nest boxes, where one box is put inside of another a little larger and the operation repeated until the last box requires a man to lift. The growth in the size of lake steamers has been precisely like it. The Nelson Mills, the great boat of 1870, measuring 181 feet over all, could be put inside of the Minnesota of 1880. The Minnesota would fit loosely inside of the Missoula of 1887. The Missoula would rattle in the hull of the John Mitchell of the next year. The Mitchell could be stowed away in the North West of the next year. Even the Coralia of 1895, 438 feet long and predicted by some builders then to represent the extreme possibilities of the lake type of steamer, could be swallowed in the bare hull of the steamer building at West Bay City for John D. Rockefeller, which will carry about 7000 tons on next year's draught of water through lake channels. In its capacious hold might be stowed away the contents of some two hundred freight cars of the largest type, or a continuous line of cars more than a mile long. If the cargo were wheat at \$1 a bushel it would be worth \$240,000."

Referring to the action of the Russian government in placing an order with the Cramps for two war vessels, and the action of our own government in buying all kinds of merchant vessels within the past month to help make up a war fleet, a Philadelphia correspondent says: "The idea of a country like this hurrying and scurrying around the whole world, knocking at every door, for a few ships to complete our navy at almost any price the owners saw fit to name, when our own magnificent yards might have been at work for years past, so as to be ready for just such an emergency as this! It would have been a big saving in money and some saving in dignity to have had them so employed, but 'all's well that ends well.' After such a lesson, however, and such demonstrations of what can be done in an emergency, the products of our ship yards will rank higher than ever before, and if our own government fails to utilize them as they ought it is pretty sure that other countries will have a better appreciation of what they can do. The point I wish to make is that an early settlement of the Spanish question ought to be an immense bull card for American naval products, as well as for tools and engineering work generally, while the home trade ought to be taken up with greater vim than ever."

Officers of the Maritime Canal Co. of Nicaragua, elected at the annual meeting of the company in New York on the 5th inst., are: President, Hiram Hitchcock; vice-president, Charles P. Daly; secretary and treasurer, Thomas B. Atkins; directors, Charles P. Daly, Daniel Ammen, Henry E. Howland, Horace L. Hotchkiss and Robert Sturgis. In the United States senate on the same date Senator Morgan re-introduced in a modified form his bill of the last congress, amending the act incorporating the canal company. The capital stock of the company is fixed at \$100,000,000, the principal and interest to be guaranteed by the government, which is to have a lien on the assets of the company. The canal is to be completed under the supervision of United States engineer officers within six years, and is to cost not exceeding their estimate of \$115,000,000. A new section declares the neutrality of the canal, with a proviso that it

being a necessary connection between the eastern and western coasts of the United States, the right is reserved to protect it from all interruptions at all times.

Col. Lydecker is thoroughly displeased with the report sent out from Sault Ste. Marie that he is guarding the great locks against possible injury or destruction by Spanish spies. "It is true that I have had guards watching the canal and locks day and night for some time," said the colonel, "but I was endeavoring to keep it secret, and had supposed nobody except a few trustworthy people knew anything about it. Now the report has been sent all over the country, and this publication will only serve to call the attention of enemies of the government, who perhaps never before thought of it, to the fact that immense damage might be done to the lake commerce and the country in this way. There is not the least truth in the report that dynamite was found in a shed near the locks, nor at any other point."—Detroit Free Press.

Sir William White, of English naval fame, says: "The proportion of ships of very large dimensions to the total number built is not nearly so great as is often asserted. Taking the 190 ships of the English navy, it may be interesting to arrange them according to displacement tonnages. There are twenty-two ships over 14,000 tons, and of these all but two are battleships. The exceptions are the Powerful and the Terrible, cruisers. Between 12,000 and 14,000 tons there are eleven ships, seven battleships and four cruisers; between 10,000 and 12,000 ten ships, two being battleships. Twelve cruisers are from 6,500 to 9,100 tons; twenty-four between 4,000 and 5,800 tons, forty-six between 2,000 and 4,000 tons. Between 1,000 and 2,000 tons there are twenty-two vessels, and forty-three are less than 1,000 tons. Little more than one-fifth of the total number are over 9,000 tons."

During the past winter a petition asking for an increase of 25 per cent. in wages for the present season of navigation was signed by practically all of the engineers of lake vessels who are members of the Marine Engineers' Beneficial Association. The petition was presented to the Lake Carriers' Association. The Review has had several inquiries of late as to what was done about this petition, but it cannot be learned that any action has been taken upon it by either engineers or owners. When lake freights opened lower this year than they were in the spring of 1896, last year's schedule of wages was adopted.

An order has been placed with the Vulcan Ship Building Co. of Stettin by the Hamburg-American line for a steamship, which, it is said, will eclipse anything afloat in the transatlantic trade, and even excel the powerful North German Lloyd liner Kaiser Friedrich, whose builders guarantee her to make half a knot more than the Kaiser Wilhelm der Grosse, which has a record for a voyage to Southampton from New York of 22.35 knots. The new steamship will register more than 14,000 tons and will be 685 feet long, 66½ feet beam and 44 feet deep. She will be completed in 1900.

As finally passed by both houses of congress the naval appropriation bill provides for four timber dry docks costing \$825,000 each, to be situated at Portsmouth, Boston, League Island and Mare Island, and a steel floating dock for Algiers, La., to cost \$850,000. The secretary of the navy may in his discretion have one of the stationary docks built of granite or concrete faced with granite, and an additional appropriation of \$200,000 is provided with this end in view.

Capt. George W. Brown has been chosen governor of Sailors' Snug Harbor, Staten island, to succeed Lieutenant Commander Delehanty, who was ordered to sea. Capt. Brown is a retired naval officer. He was with Admiral Dewey during the war. He carried the news of the battle of New Orleans to Havana, from where it was cabled to New York.

The naval appropriation bill, just passed by congress, provides that hereafter all first-class battleships and monitors owned by the United States shall be named for the states and not for any city, place or person until the state list is exhausted. This will not affect, of course, any names already assigned.

The Hamburg-American line has purchased three new steamships in England, which were under construction for Messrs. Furness, Withy & Co. The price paid is understood to be \$550,000 each. Sir Charles Furness has placed another order for two steamships, each to be 10,000 tons dead weight.

Messrs. H. M. Hanna and John F. Pankhurst, president and vice-president, respectively, of the Globe Iron Works Co., Cleveland, are both at home after long absence in the south, where they sought improvement in health.

When hostilities with Spain are terminated, look for rapid construction of ships of commerce in our seacoast yards. The American navy is advertising American war ships. There is also a big coast fleet, which has been taken by the government, to be replaced.

Charles H. Allen of Lowell, Mass., who succeeds Theodore Roosevelt as assistant secretary of the navy, served two terms in congress and was a candidate for governor of Massachusetts against Wm. E. Russell.

Rear-Admiral Walker, U. S. N., retired, who is chairman of the Nicaragua canal commission, has asked for \$100,000 additional to complete the surveys of the canal.

It is said that the gift of Yale college to the auxiliary cruiser Yale, formerly the Paris of the American line, will be two Vicar-Maxim guns, costing upward of \$6,000.

The American line steamer St. Paul, refitted by the government as an auxiliary cruiser, is now in service. She has a battery of thirty guns.

All about Rope.

Ships use great quantities of Manila rope. The manufacturers of rope and the ship chandlers of the country were therefore very much interested in market conditions pertaining to this article long before there was any certainty of hostilities between Spain and the United States. About a year ago an insurrection was expected in the Philippine islands and immense quantities of hemp were shipped to Europe and this country. The manufacturers of rope are said to have lost a great deal of money on this operation, but the effect of it was to reduce supplies of the fibre from the Philippines. Now comes the war with Spain and the advance in Manila rope, said to be due as much to short supplies of hemp as to the fear of a long continuance of the war. All the fibre which is made into Manila rope comes from the Philippine islands. The plant resembles the banana. It grows from seeds and also from shoots or suckers, often to the height of 20 or 25 feet, having a tuft of leaves only at the top. It is difficult for those who live in temperate climes to realize the rank growth of tropical vegetation. When properly matured, the leaves are peeled off down to the bottom of the tree. The fibre is then separated, dried and cleaned, and tied in hanks, being from 10 to 15 feet in length; these, in their turn, are put up in bales of 270 pounds, in which shape the material is shipped to Europe and America for manufacture into rope and binder-twine. The importation of Manila hemp into the United States during 1897 was 123,349,500 pounds.

The fibre called Sisal is from a plant that grows in a wider extent of territory, but the best and most profitable country for its cultivation is Yucatan, now part of Mexico. The importation of Sisal into the United States in 1897 was 118,601,280 pounds, and of New Zealand hemp 903,690 pounds.

In manufacturing a rope, the fibres are first spun into a yarn, this yarn being twisted in a direction called "right hand." A number of these yarns are then twisted "left hand" into a strand. Three or four of these strands are then twisted "right hand" into a now completed rope. As the strand is twisted it tends to untwist the threads, and as the rope is twisted it tends to untwist the strands, but to retwist the threads. It is this opposite twist that tends to keep the rope in its proper form. When a weight is hung on the end of a rope, the tendency is for the rope to untwist and become longer. In untwisting the rope it would twist the threads up, and the weight will revolve until the strain of the untwisting strands just equals the strain of the threads being twisted tighter. In making a new rope it is impossible to make these strains exactly balance one another. It is this fact that makes it necessary to take out the "turns" in a new rope, that is, untwist it when it is put at work. The greater the twist in a new rope the better it will keep its form, but it is not quite as strong, because the fibres are strongest in the direction of their length, and the greater the angle of the fibres, due to the twist of the strand, the less is their resistance in the direction of the center line of the rope. In bending over a sheave or drum, the rough fibres slide over each other while under pressure from the load, causing internal chafing and wear. Open an old rope by untwisting the strands, and a fine powder will drop out, due to the cause just mentioned. The larger the sheave, therefore, the greater the life of the rope.

Two Commanders for one Coveted Ship.

Lake vessel men who became acquainted with Commander B. P. Lamberton of the navy during his connection with the light-house service, will be interested in the following dispatch of recent date from Washington:

"There is one officer with Dewey's fleet who probably regrets he was not assigned to the squadron a week sooner. He is Commander B. P. Lamberton, who succeeded 'Fighting Bob' Evans as President Cleveland's ducking companion on the Myrtle and Mistletoe. Commander Lamberton was ordered to the Boston early in March. He was to relieve Commander Wildes, whose cruise had expired, and who had been directed to return home. Commander Lamberton arrived at Hongkong just a few days after the war resolution went through congress. Commander Wildes objected to being relieved when hostilities with Spain were certain. He cabled the Washington authorities, making an earnest appeal to be retained on his ship. Commander Lamberton was equally anxious to have the Boston, and the two kept up a lively cable communication with the department. Commodore Dewey declined to interfere, but finally Commander Wildes was told to hold his ship and Commander Lamberton was left on a foreign station without a command, while war was on between Spain and the United States. The next best thing was given him, however. He was appointed chief of staff under Commodore Dewey, and with him planned and directed the whole battle."

The inventor and the man with "a wonderful discovery" is in evidence in Washington these days. A late dispatch from the capital says: "It has been discovered that the deposits of gilsonite—a species of asphalt—found in Utah will yield a substance which can be used to paint ships' bottoms, and which will protect them from corrosion, seaweed and barnacles in a remarkable degree. As the United States government owns the only known deposit of this substance, the value of this discovery in the present state of naval activity will be immense. At present a cruiser long in the service, that made 20 knots an hour on her trial trip, can only make 14 or 15 because of her foul bottom; but with her hull painted with gilsonite it is believed she can be run for years without it becoming necessary to dock the vessel to clean her bottom."

Admiral Dewey's program for the engagement in Manila bay has been likened to a railroad time table, and the movements of the vessels were on time. Had anything gone wrong with the engines, or any of the parts become heated as a result of poor lubrication, the precision of the movements would have been interfered with. In this connection it is interesting to note that the flag-ship of the fleet, U. S. S. Olympia, took on twenty-five barrels of No. 1 Vacuum engine oil, and the smaller vessels corresponding quantities, before they left Hong Kong for Manila. The Vacuum company has branches in the principal ports of the world.

To Insure the Merchant Marine.

A bill to protect the merchant marine of the United States in time of war has been introduced in congress. It is proposed to have the government make good any loss to vessel or cargo by attack of the enemy. Representative McCall of Massachusetts is the author of the measure. It provides that in time of war the bureau of navigation, and any auxiliary department of the treasury of the United States, to be designated by the secretary of the treasury, is authorized, on the application of the owners, being citizens of the United States, to ascertain the value of all stanch, scaworthy and properly manned and equipped sea-going vessels, documented as of the merchant marine of the United States, and of the cargoes, shipments and consignments from time to time therein. Any overvaluation or misrepresentation by any owners shall forfeit all benefit of this act. Valuation shall be received and readjusted as often as once a year, and for vessels engaging in the foreign trade as often as, and before, the departure of any such vessel on any foreign voyage and for all cargoes before the departure from the port of shipment. Like applications may be made in foreign countries to the nearest available consulate of the United States for determination of ownership and value.

In the event of any depredation by a public enemy upon any such vessels, cargoes or shipments, the United States will indemnify the owners, always excepting money, bullion securities, guns and explosives, except for the use of the vessel. In addition to compensation for loss of property, such indemnity may include all wages due to men and officers, all of which wages shall be paid by the owner or owners of such vessels' cargoes. The court of claims shall determine the amount of loss on a petition by the owners of the property so lost or destroyed. On the event of the sailing in time of peace of any vessel or cargo belonging to citizens of the United States, and subsequent breaking out of war, and damage, loss or destruction of such vessel or cargo by depredation of a public enemy, before the arrival thereof in any port, such owners may be entitled to the benefit of the bill.

The merchant marine is authorized to carry such equipment by way of armament or otherwise as the owners may see fit to provide, and while in no event authorized to be an aggressor upon the peaceful commerce of an enemy, under peril of forfeiting the benefit of this act, yet if pursued, attacked, or summoned to surrender by the enemy, the right of our commerce to defend itself is fully recognized and encouraged. The loss by destruction thereof on the sea, in the presence of an enemy of superior force, voluntarily incurred to prevent the property destroyed from falling into the hands of the enemy will be indemnified as if the hostile capture thereof was suffered. In the event of capture from the enemy by such resistance, all property so taken shall rest in the United States, but extra indemnity from peril incurred in the resistance may be awarded to the owners and officers and crew of the captor in an amount not to exceed one-third the value of the property so captured. The prize laws of the United States are amended so that at least one-half of the value on proceeds of all prizes shall go into the treasury of the United States, and in all cases of recapture of vessels or freights belonging to citizens of the United States restitution shall be made to the owners in reduction of any insurance or indemnity to which the owners might otherwise have been entitled.

Knapp's Roller Boat.

It is reported from Toronto that Inventor Knapp, who has won notoriety, if not fame, for designing a rolling boat, is about to descend upon the navy department at Washington with plans for a rolling navy. Mr. Knapp's experiments with his strange craft in Toronto harbor last summer are fresh in the minds of people of the lakes, and it is, therefore, with considerable awe that one reads of the proposal the inventor intends to make to the Washington authorities. He asserts that he can build a boat 200 feet high in three months and that it would be an ideal troop-ship. It would be capable of carrying 30,000 men and "would, of course, be much faster than any of the ordinary vessels at present running on the ocean." As the boat would draw little water, it could get very close to the land. "It would not need to enter any particular port," says the inventor, "but could land troops at any point on the shores of Cuba. The boat, too, would carry 60,000 tons of freight and could be used as a coal boat. With 60,000 tons of coal on board the rolling-boat would be a movable coaling station for the fleet. Both ends of the boat could be armed with guns, so that the enemy would be unable to take it." It is said that Senor du Bose, the first secretary of the Spanish legation to the United States, inspected the craft at Toronto, a few days ago, and advised Mr. Knapp to open negotiations with the Spanish government, with a view to selling it a boat. This should be done by all means. A craft 200 feet high and rolling around like a porpoise would be a beautiful thing for American sailors to shoot at.—Buffalo Express.

Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store in regular elevators at the principal points of accumulation on the lakes, May 7, 1898:

	Wheat, bushels.	Corn, bushels.
Chicago	3,161,000	9,887,000
Duluth	3,006,000	2,355,000
Milwaukee	144,000
Detroit	39,000	194,000
Toledo	388,000	485,000
Buffalo	969,000	979,000
	7,707,000	13,900,000

As compared with a week ago, the above figures show, at the several points named, a decrease of 227,000 bushels of wheat and 1,546,000 bushels of corn.

Charles Reeder & Sons, Baltimore, have just launched the steel screw steamer Susquehanna, a vessel of 160 feet length and 40 feet beam which they are building for the Port Deposit & Havre de Grace Steamship Co.

Starboard and Port or Right and Left.

The question of the advisability or otherwise of universally adopting the new words of command used in some foreign vessels in conveying orders to the man at the wheel is coming forward again in Scandinavia and Germany. The German Nautical Association is to discuss the question at a meeting to be held in Berlin. A circular referring to this meeting points out that the question of a change in the words of command addressed to the steersman used as a general rule on board ships of all nationalities, in the sense that the order given should more nearly correspond with the movement carried out in response to it, is not a new one. Ever since the general adoption (except in the case of small boats) of steering by the wheel, instead of by the tiller, the idea has been constantly expressed that the old words of command carry a kind of contradiction with them, as, for instance, when a captain wishes the bow of his ship to be turned in the starboard direction, he has to pass the order to "port," and vice versa. The subject has engaged the attention of most of the maritime nations, but no settlement has ever been arrived at, because the reasons for and against any alteration put forward by the parties interested have been stoutly defended on both sides and as obstinately adhered to. The matter was much discussed in England in the seventies. Shipping authorities were uniformly of opinion that a change ought to take place, but shrank from the possible consequences of such a change during the period of transition from the old to the new. It was proposed that the old words of command "starboard" and "port" should be dropped entirely, and that the words "right" and "left" should be substituted for them, because these words would correspond to the movement of the ship's head to the right when the order "right" was given, and vice versa. This proposal, however, met with many opponents, who maintained that the old words of command did not carry a contradiction with them, but, on the contrary, expressed in a very direct manner what was meant, as, for instance, when the order "port" was given it meant that the after-end of the ship should be moved to port, while the bow sheered off to starboard. Other objections were also made to any alteration in the words of command, and although many different proposals were made in England to solve the problem, things remained as they were, and the old orders to "port" and "starboard" the helm are still in vogue, both in the British navy and the mercantile marine.

In Germany the question cropped up at about the same time as it did in England, and has again been discussed on several occasions subsequently, but no general agreement has been arrived at; and, although a change has been effected on board the steamers belonging to one or two of the largest shipping companies, the old words of "steuerbord" and "backbord" have, as a general rule, been adhered to. The same proposal that was made in England was also made in Germany, viz.: that the words of command should be changed to "rechts" and "links" ("right" and "left"), to be used in the sense that when "rechts" was ordered it should mean that the head of the vessel should be made to turn towards the right, and vice versa. In the year 1891, the German Nautical Association held an extraordinary general meeting for the discussion of this question. At this meeting, at which all the nautical societies of Germany and many mercantile associations were represented, the subject was thoroughly threshed out, and many arguments for and against were brought forward. It was urged, for example, that the words of command "rechts" and "links" were already adopted by some of the largest German shipping lines, and that was a good reason why the same system should be adopted on board all other German vessels. But the proposal was never adopted, and at the present day the old words of command still prevail on the great majority of German merchant ships, while one or two of the big companies (the North German Lloyd and Hamburg-America, for instance,) have adopted the new words "right" and "left."

In the French navy the old words of command "tribord" (starboard) and "babord" (port) have been discarded for "à droite" (right) and "à gauche" (left), and this system has mostly, although not entirely, been adopted in the French merchant navy. On board Belgian ships the order "starboard" is given when it is intended that the head of the vessel should turn to starboard, and "port" is ordered when the ship's bow is required to be moved to port. In Dutch vessels, however, the very reverse is the case. Although the same order is given as on board Belgian ships, it has quite an opposite meaning; for instance, when "starboard" is ordered it means that the ship's bow should be turned to port. In Italian and Austrian vessels the words "dritta" (right) and "sinistra" (left) are used, and in this sense, that the order "dritta" is passed when it is required to turn the ship's stem to the right, and "sinistra" when her head is wanted to be turned to the left. In the Portuguese navy the same system is followed, while the words of command on board Portuguese merchant ships differ considerably. In the Swedish navy the new system—"port" and "starboard" in the reversed sense—has been adopted by a royal decree dated March 18, 1872, whereas in the mercantile marine the old words of command are in the majority of cases still in vogue. In Norway and Denmark the old system has so far been adhered to.

It will be seen from the above particulars that the words of command addressed to the helmsman and their meanings differ considerably on board the ships of the various maritime nations of Europe, and it can scarcely be contested that great advantage would follow the universal adoption of some system or other, seeing that in the present state of things it is very easy for a fatal mistake to be made at a critical moment by a man at the helm who has served on board vessels of another nationality by carrying out an order he has received in the very opposite sense to what was intended. The whole subject was brought forward and thoroughly discussed at the fourth meeting of the Nordisk Mariners' Association at Stockholm, and the Nordisk Shipowners' Society received a mandate to take steps for obtaining the adoption of the same words of command by all the seafaring nations, and the replies which flowed in from numerous maritime and nautical institutions, both in Scandinavia and abroad, in answer to the inquiries made by the last-mentioned body, proved that the subject was one which aroused the greatest interest everywhere as being not only of the greatest utility but quite in accordance with the spirit of the age. Most of the replies were to the effect that it was highly desirable that the word of command to the helmsman should express the direction in which the ship's head was required to be turned, and not the contrary, as is generally the case now; but the opinion was

also just as universally expressed that the change ought not to take place unless it should be internationally agreed upon. The Nordisk Shipowners' Society is of this opinion, but at the same time it goes one step further than any of the other maritime bodies which have given their attention to the matter. It suggests that not only ought a general agreement be arrived at with respect to the system under which orders are passed to the steersman, but that the words themselves should be the same in all the vessels of all the nations, so that a seaman of any nationality should be able perfectly to understand the orders given by an officer of any other nationality. This, no doubt, is a consummation devoutly to be desired, but the difficulties in the way of the adoption of the same words of command in vessels of all nationalities would probably prove to be enormous, although not perhaps much more difficult than the adoption of a uniform system carried out in the language of each different nation.—Fairplay, London.

Proposals for Construction of Surfboats.

Bids were opened in the office of the superintendent of the United States life-saving service, Washington, D. C., on the 6th inst. for the construction of twenty-one monomoy surfboats, fifteen of which are to be of 23 feet length and six of 26 feet length; all are to be delivered on the grounds of the Monmouth beach life-saving station, New Jersey. Following is a schedule of the proposals:

PROPOSALS FOR CONSTRUCTION OF SURFBOATS.

NAME OF BIDDER.	Six 26-foot Boats.		Fifteen 23-foot boats.	
	To be completed	Price.	To be completed	Price.
R. O. Acker, Seward, N. J.	Sept. 19, 1898.	\$243	Dec. 15, 1898.	\$214
Fred C. Beebe, Greenport, N. Y.	Feb. 15, 1899.	225	Nov. 5, 1898.	225
Samuel Ayers & Son, Nyack, N. Y.	Aug. 30, 1898.	245	April 15, 1899.	275
James Burcher, Philadelphia, Pa.	Nov. 20, 1898.	325	Dec. 30, 1898.	235
Wm. F. Butler, New Bedford, Mass.	Aug. 20, 1898.	255	Twelve weeks.	298
Gas Engine & Power Co., New York City.	Eleven weeks.	358	Nov. 8, 1898.	226
Enoch Moore & Sons Co., Wilmington, Del.	Aug. 9, 1898.	251	May 15, 1899.	325
Hughes & Hughes, Baltimore, Md.	Dec. 15, 1898.	325		

Trade Notes.

Owing to their rapidly increasing business, the Manhattan Rubber Co. has moved from the Wade building to the new Telephone building, where they occupy one of the finest store-rooms in the city. Mr. Bliss, the Cleveland manager, has greatly increased his stock of mechanical rubber goods, and is ready to meet all demands of the marine trade.

The demand for a war map of Cuba, West Indies and the world, issued by the Upson-Walton Co. of Cleveland has been such that thousands of copies of it might be given out, but it has been found necessary to confine the distribution of it to people with whom the company has business relations, and even under this restriction a new edition is being gotten out. The map is one of the best made by Rand, McNally & Co. and is folded in handy form within a stiff cover.

Capt. James R. Raymond of the Standard Automatic Releasing Hook Co., New York, is proud of the following note which was written by Admiral Dewey when chief of the bureau of equipment, navy department, in January, 1891: "I have made a careful examination of the standard automatic releasing hook, tested on board the Fortune at sea, and think it not only the best device of the kind, but the simplest and most reliable I have ever seen, and would recommend that it be adopted on board all sea-going and other vessels."

Orders for rebuilding Atlantic coast lines, as the result of numerous sales of merchant vessels to the government, are gradually being secured by eastern ship builders. The Harlan & Holingsworth Co., Wilmington, Del., has just closed a contract with the Merchants' & Miners' Transportation Co. of Baltimore for a steel steamer to be the counterpart of the Juniata, which was built at Wilmington last year and sold recently to the navy department for an auxiliary cruiser. The new steamer will be 293 feet long over all, 42 feet beam, 34 feet hold and 2,550 tons capacity, with triple expansion engines to drive her at 15 knots speed, and will have several improvements over the Juniata. She will be 2,500 tons gross and 1,900 tons net register.

On her last westward voyage the steamer Kaiser Wilhelm der Grosse boosted the single-day-run record to 580 knots.



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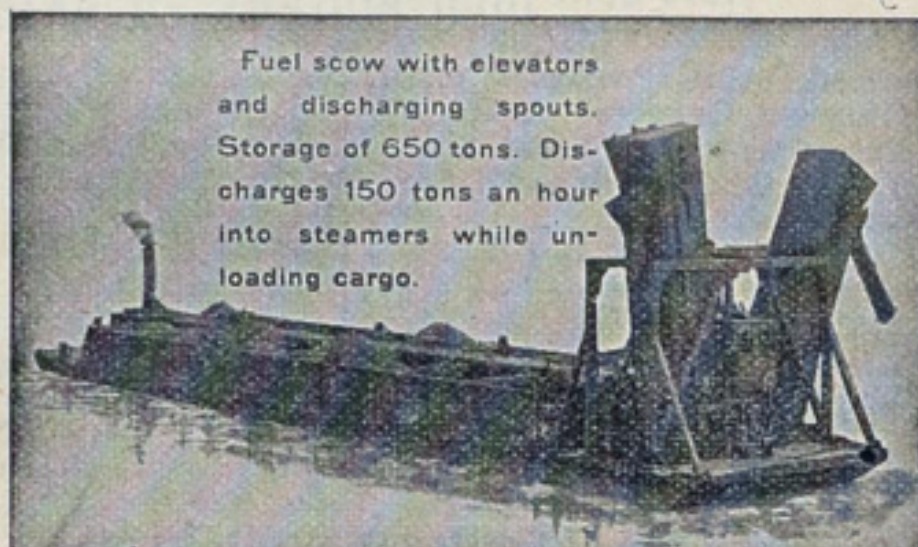
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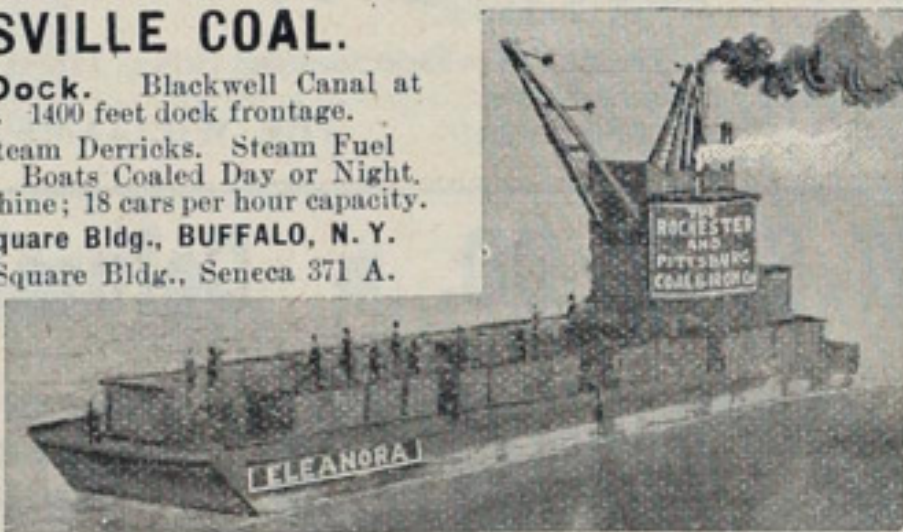
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"The Little Red Book" of appointments of captains and engineers for 1898 includes names of owners, captains and engineers of 1,000 of the principal lake vessels. It is vest-pocket size, and the price is \$1. No one interested in marine business or supplying the marine trade can afford to be without it. Marine Review, 409 Perry-Payne building, Cleveland, O.

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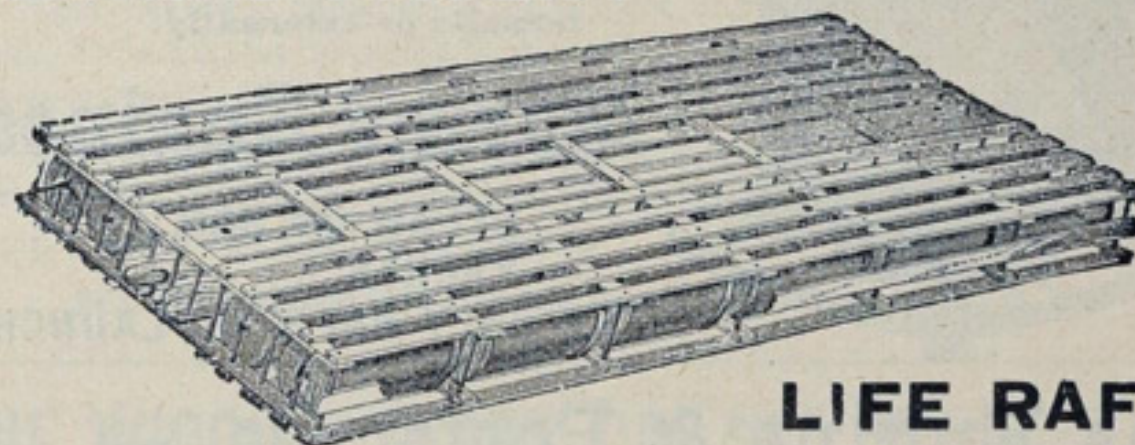
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FOOT OF ORLEANS STREET. OPEN DAY AND NIGHT.

SEALED PROPOSALS will be received at the office of the Light-House Engineer, Custom House, Mobile, Ala., until 2 o'clock P. M., May 26, 1898, and then opened, for metal work for Southwest Pass Light-Station, La., in accordance with specifications, copies of which, with blank proposals and other information, may be had upon application to A. N. Damrell, Lieut. Colonel, Corps of Engineers, U. S. A. June 1

NOTICE TO SHIP OWNERS AND SHIP BUILDERS.—Information furnished as to the strength of iron or steel vessels under different conditions, and the size and distribution of scantlings required in new vessels for different services, by a naval architect, who is an expert in this work. Address Box 452, Marine Review, Cleveland.

PROPOSALS FOR STEEL-HULLED STEAM TENDERS.—Mississippi River Commission, 2732 Pine St., St. Louis, Mo., April 27, 1898.—Sealed proposals, in triplicate, for furnishing five large steel-hulled steam tenders, complete with machinery and cabins, will be received here until 12 o'clock noon, standard time, May 27, 1898, and then publicly opened. Information furnished on application. H. E. WATERMAN, Capt., Eng'rs, Sec'y. May 20.

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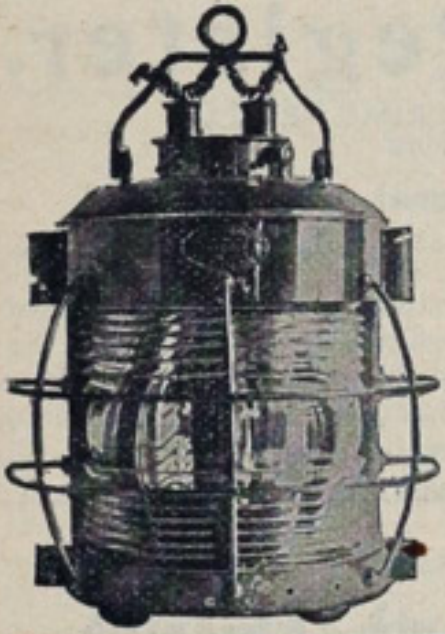
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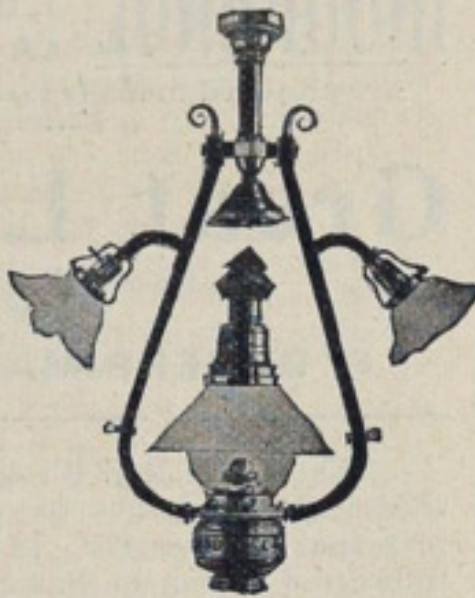
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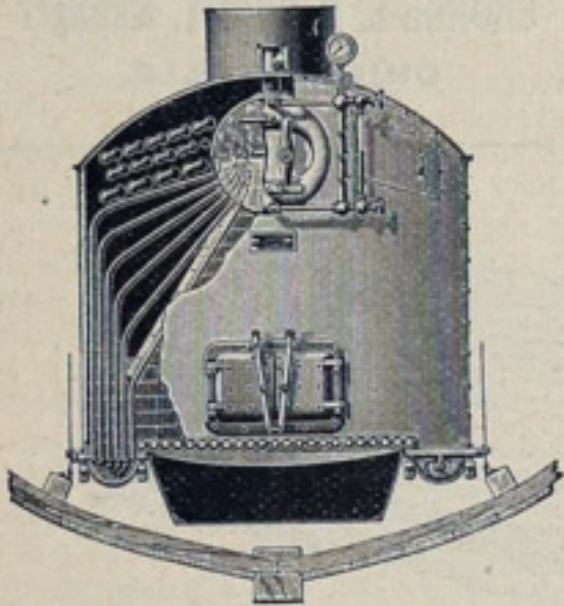
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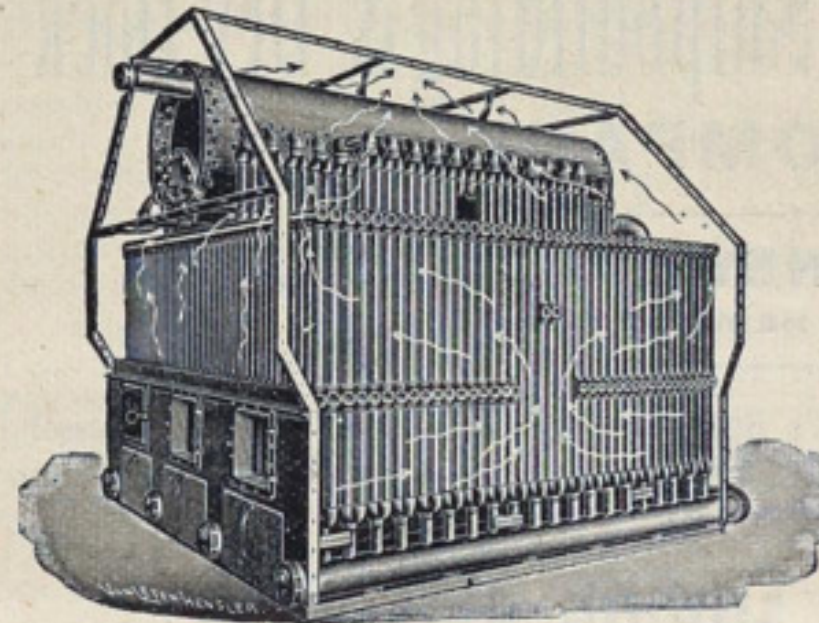
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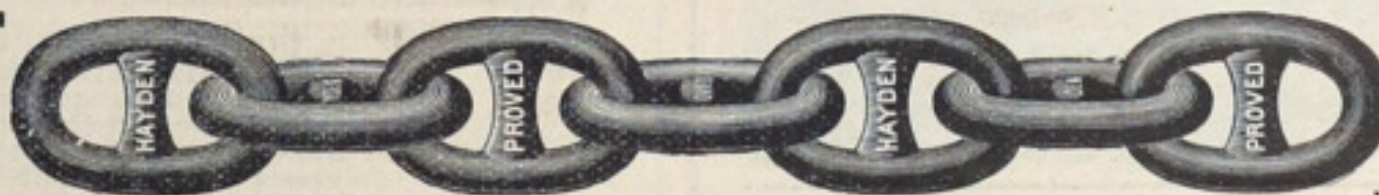
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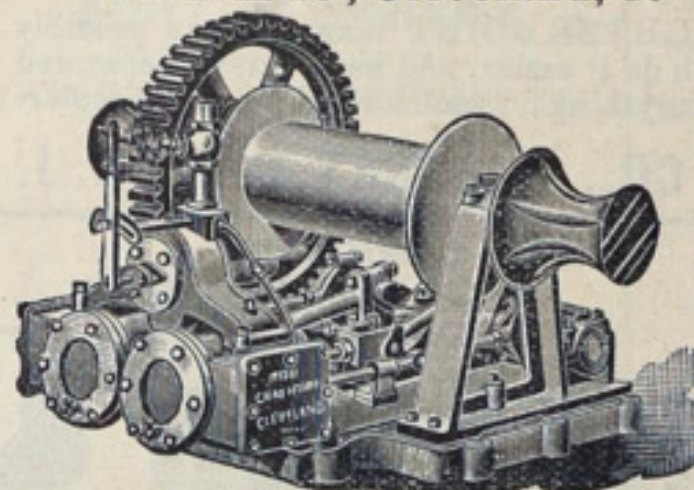
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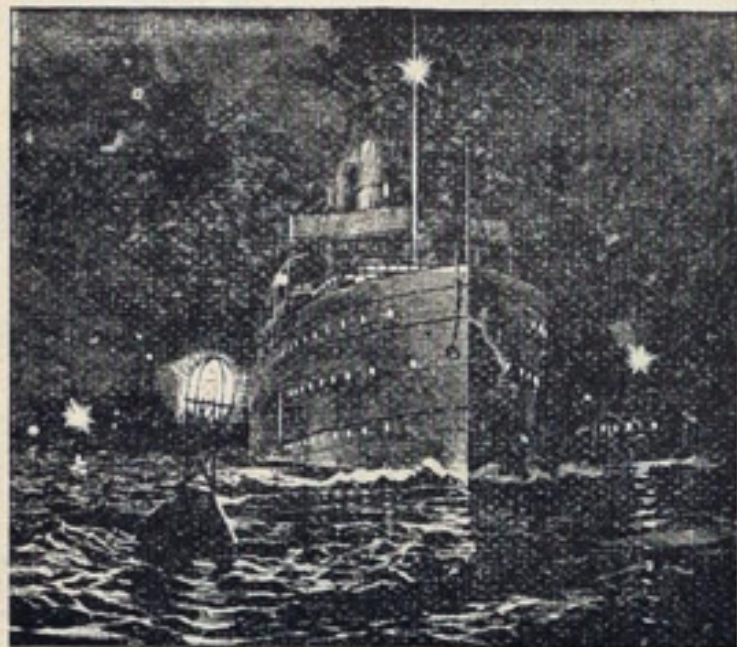
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Special Attention given to

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Adopted by the English, German, French, Russian, Italian, and United States
Light House Departments, for Channel and Harbor Lighting; over 800 gas
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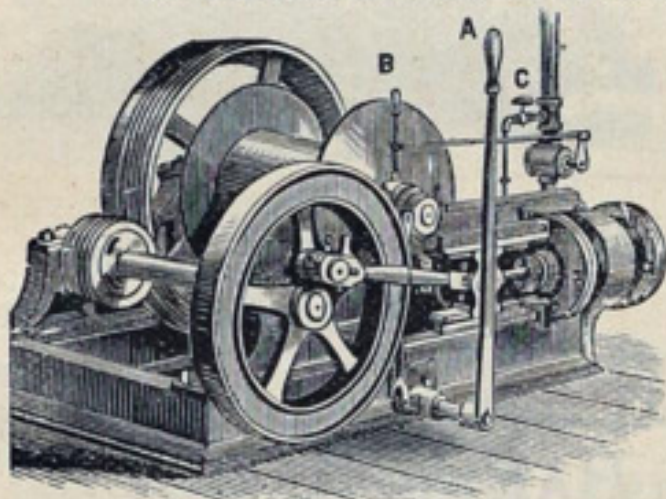
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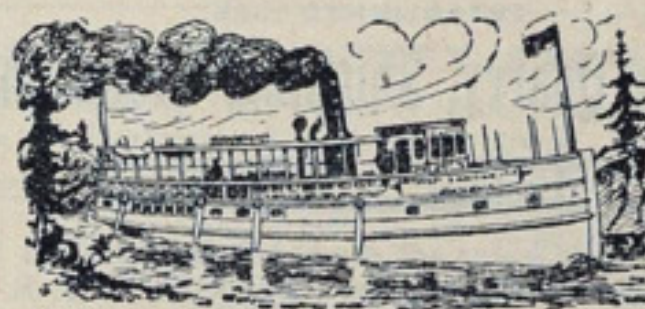


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This beautiful Steamer is in perfect condition, with Cabin, Single
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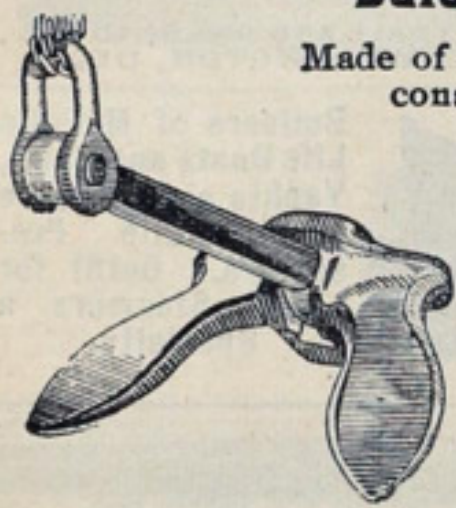
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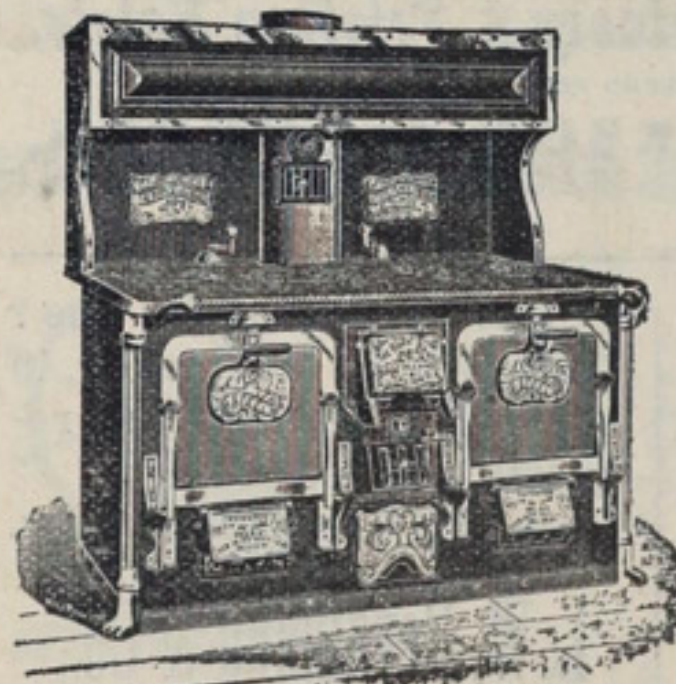
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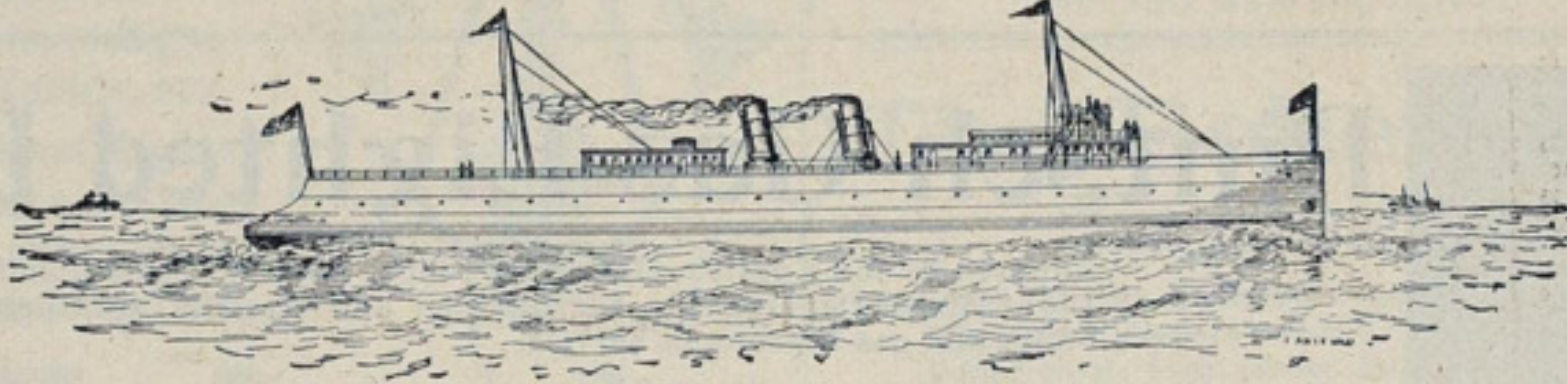
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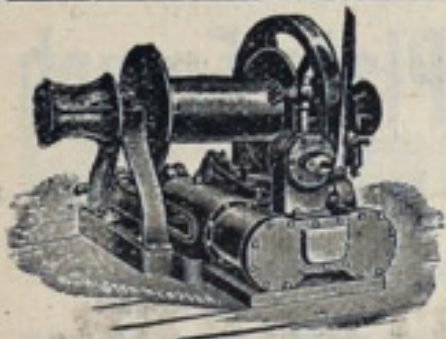
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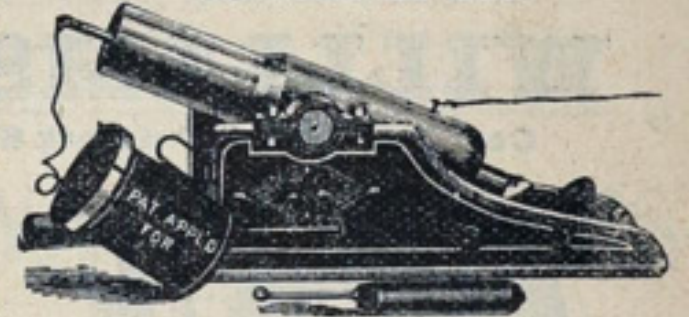
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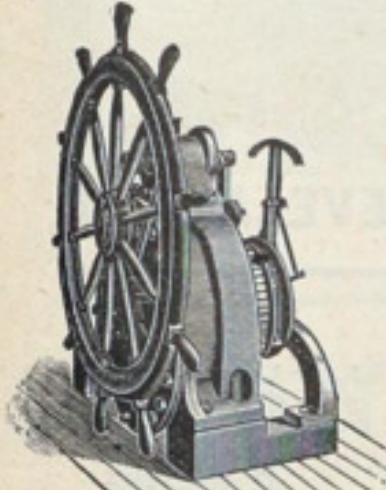
Lth. over all, 360 ft.
Lth. on blocks, 340 ft.
Width of gate, 60 ft.
Depth over sill, 20 ft.

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FOR TUGS,
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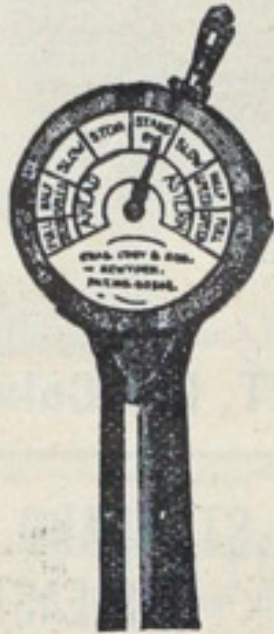
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Folding Lavatories, Pumps, Ventilators,
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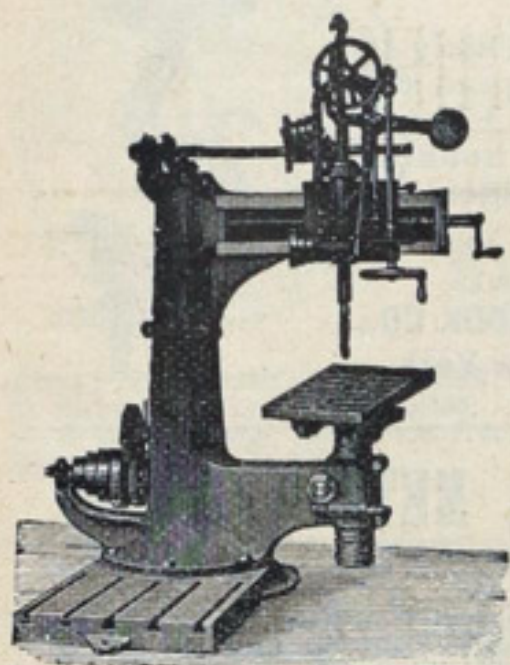
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155 ft. out to out, divided into
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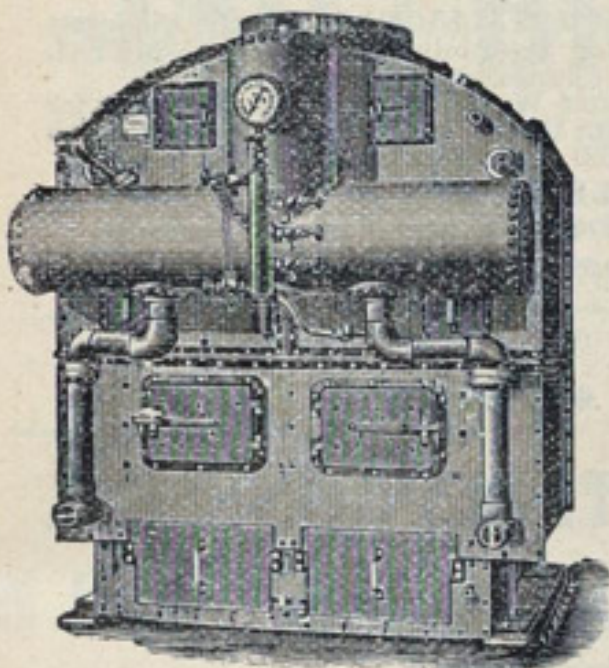
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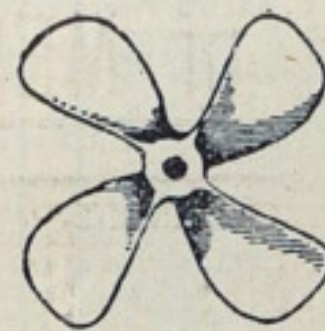
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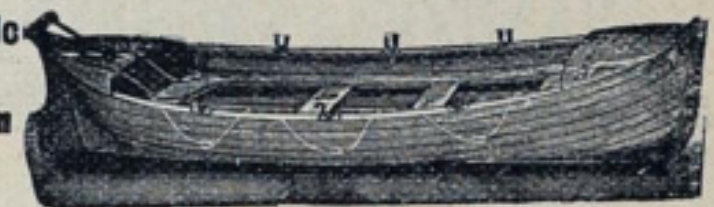
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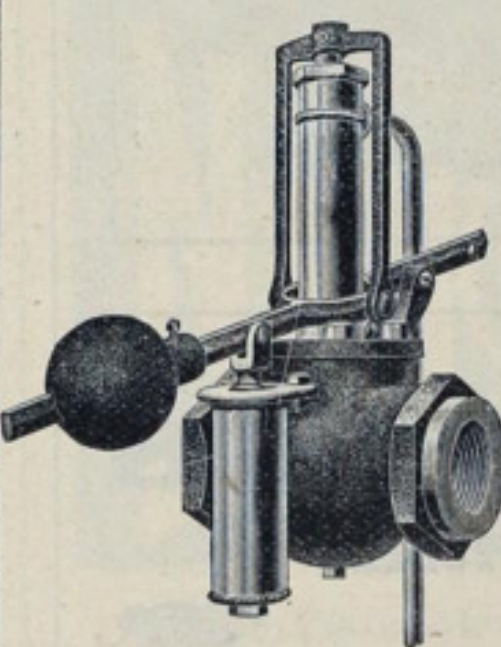
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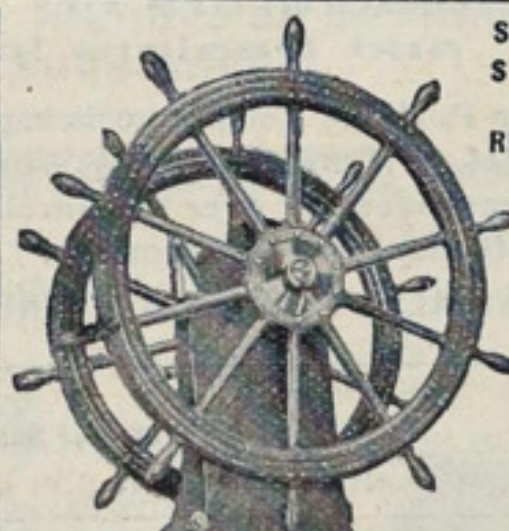
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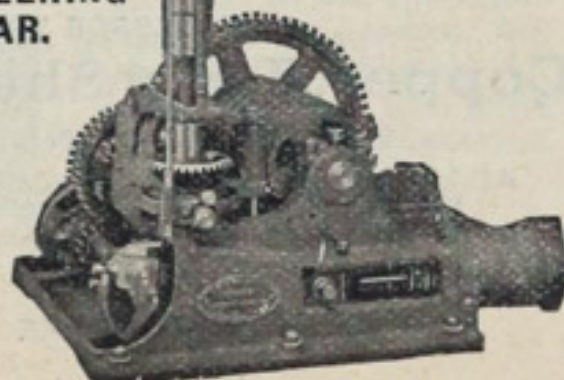


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STRONG
and
RELIABLE.

Changed from
Steam to
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Lever in
Less Than
One
Second

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Steam
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STEERING
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SHERIFFS STEAM STEERER.

MADE IN TWO SIZES

Are easy to adjust and can
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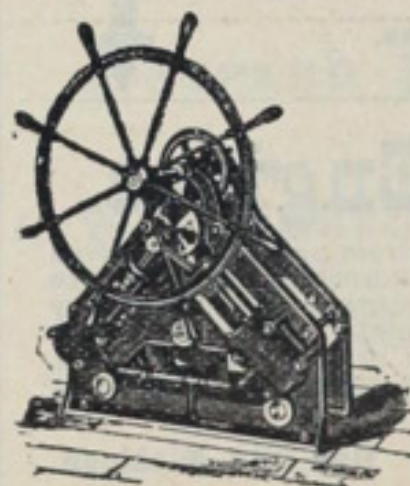
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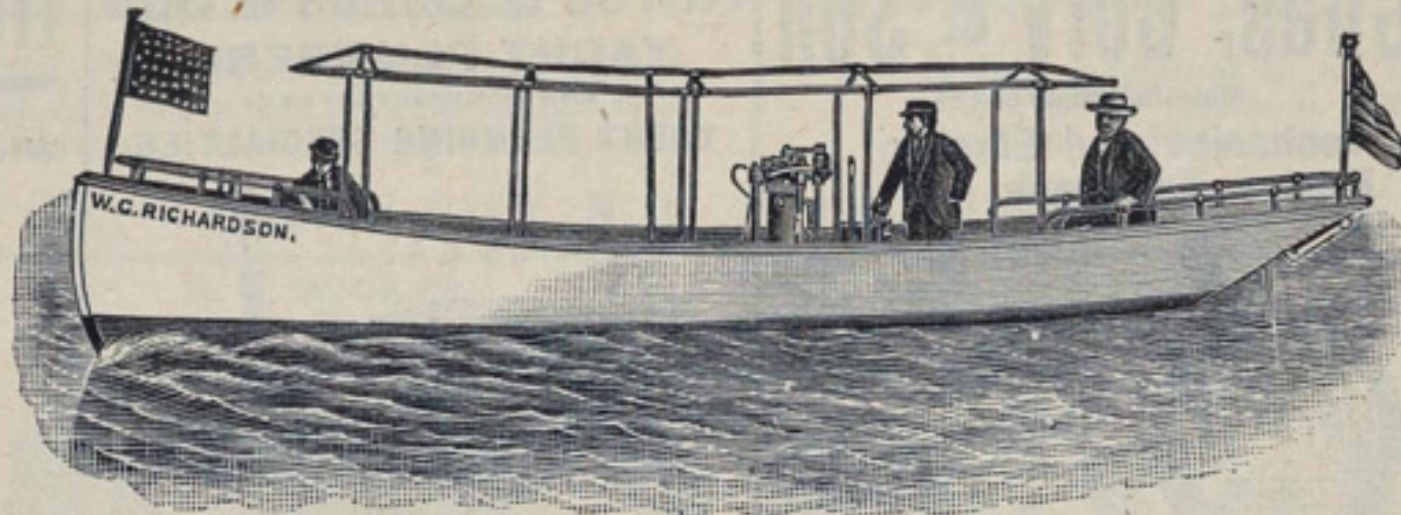


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These engines are giving entire satisfaction in the pleasure yacht W. C. Richardson and the delivery launch Lotta.

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A SPECIALTY.

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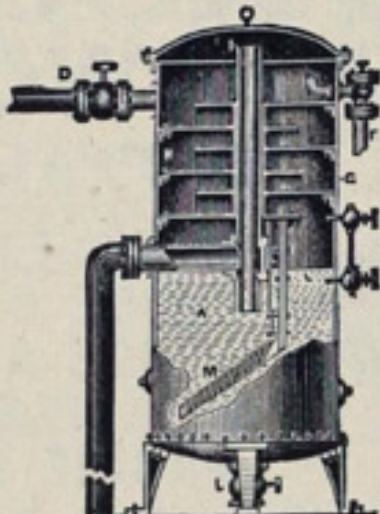
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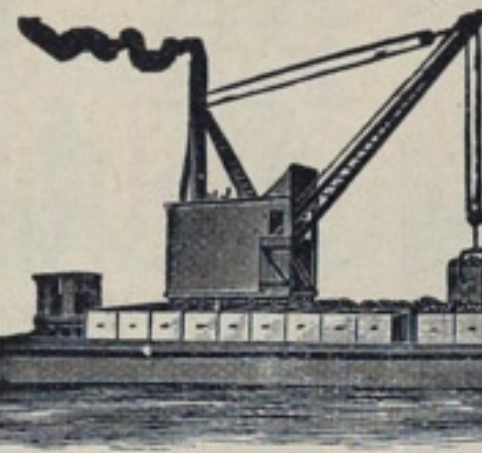
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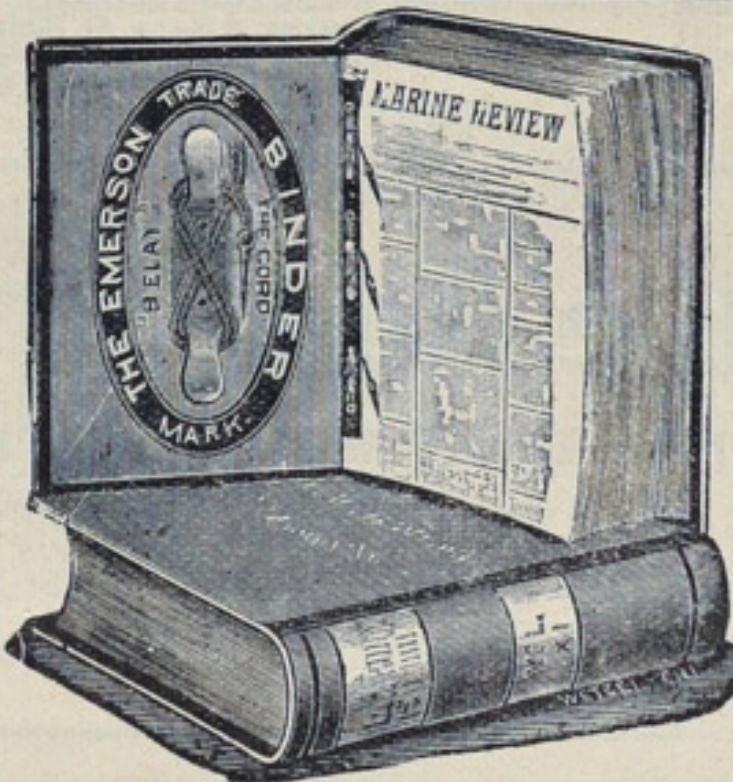
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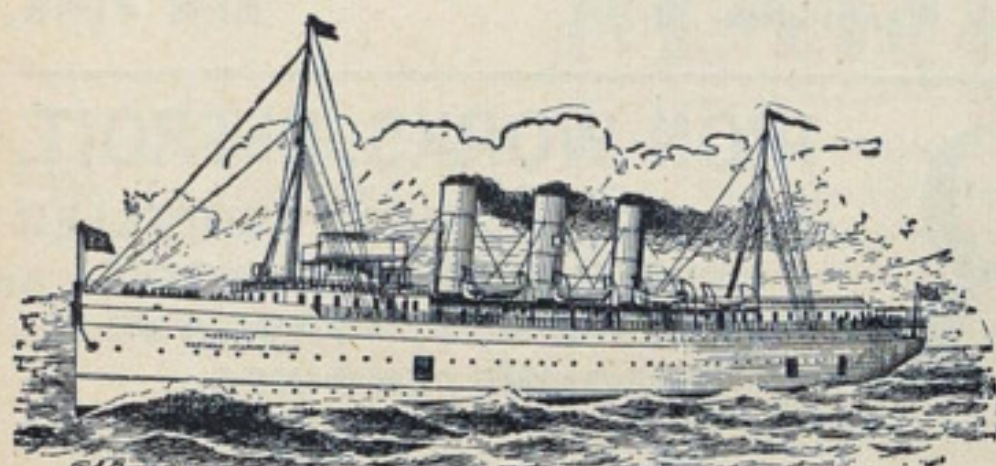
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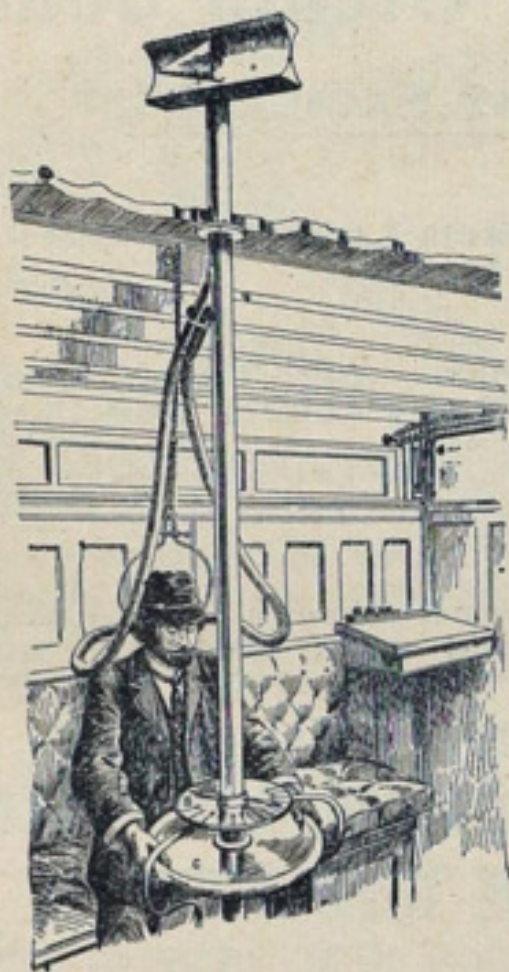
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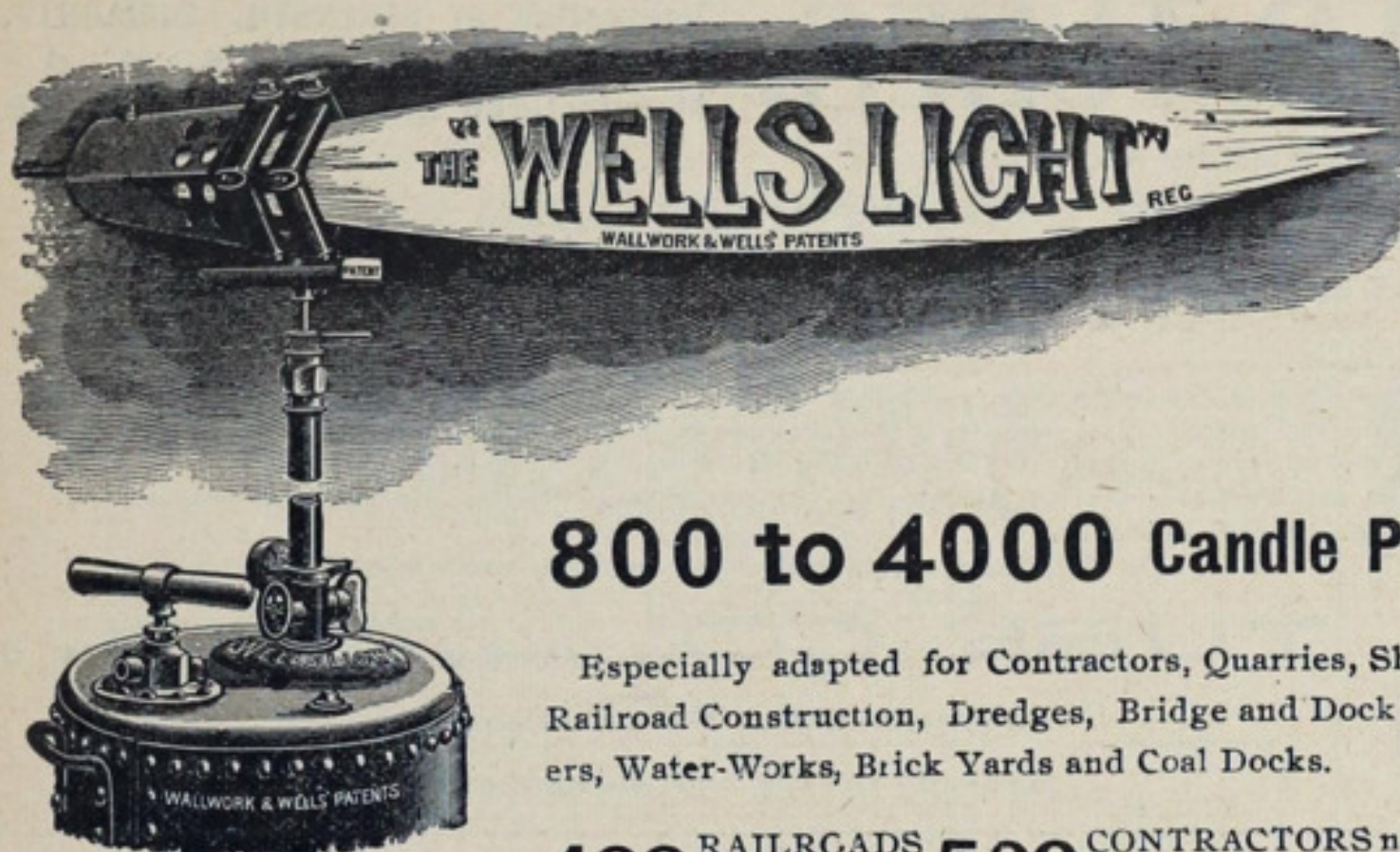
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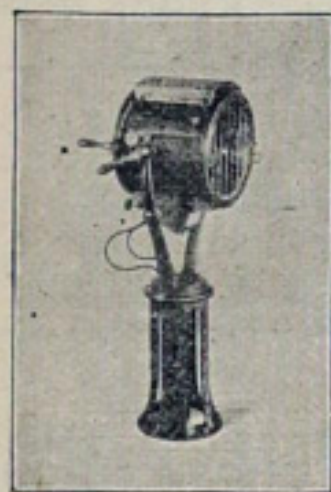
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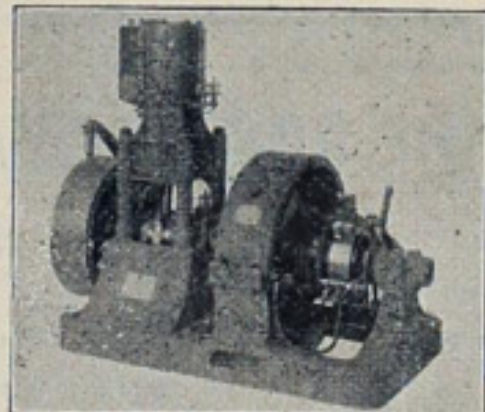
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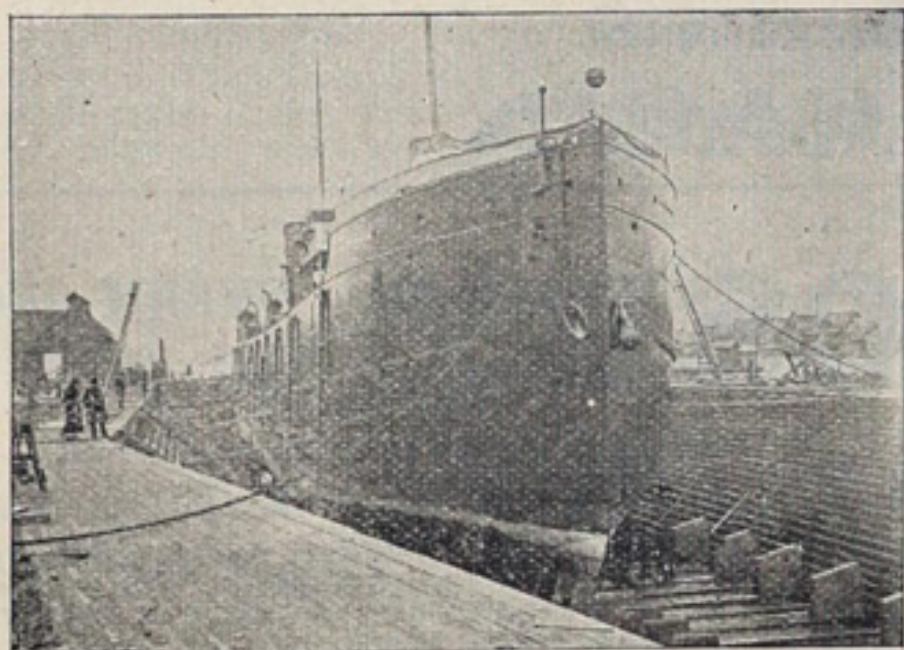
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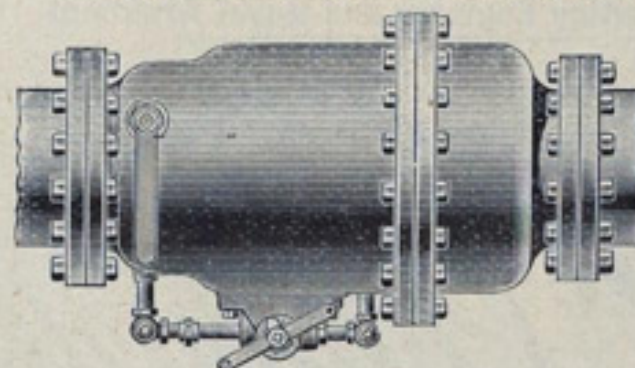
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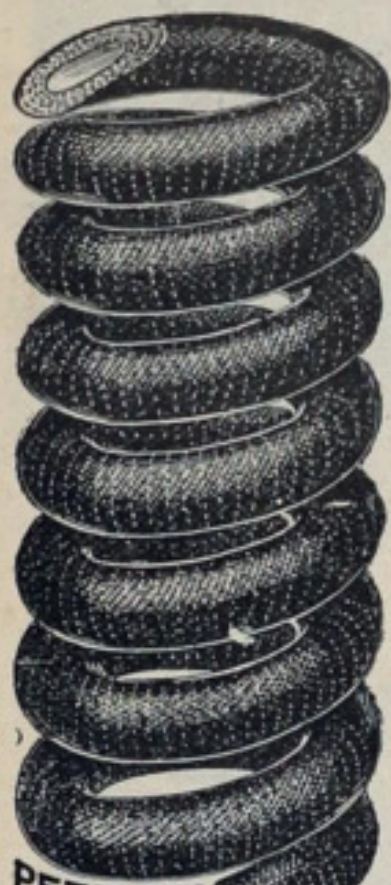
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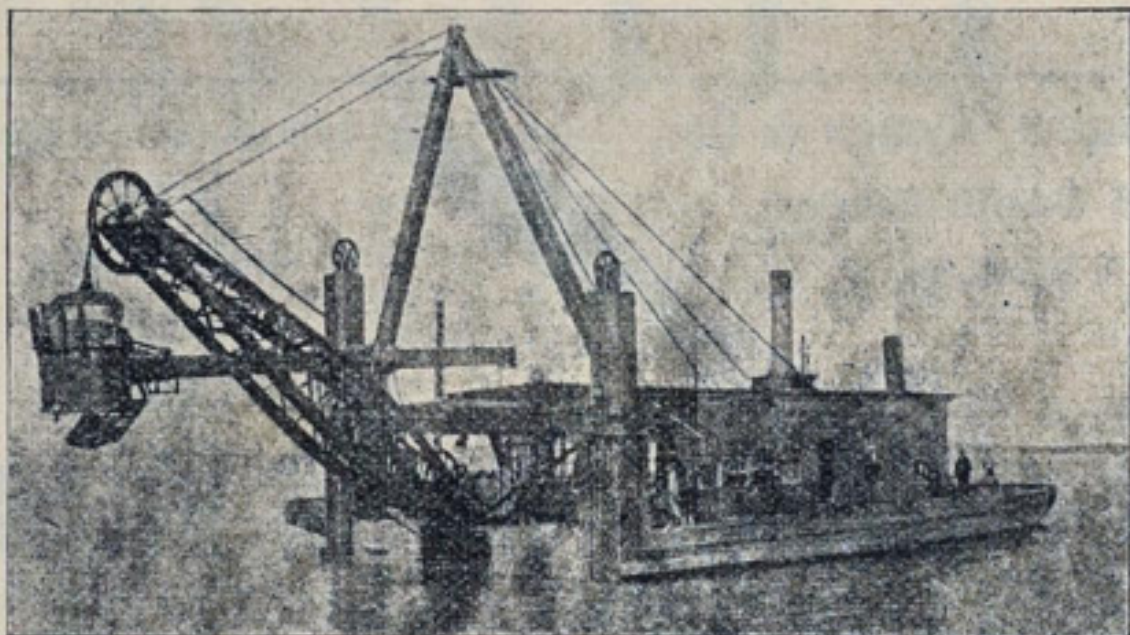
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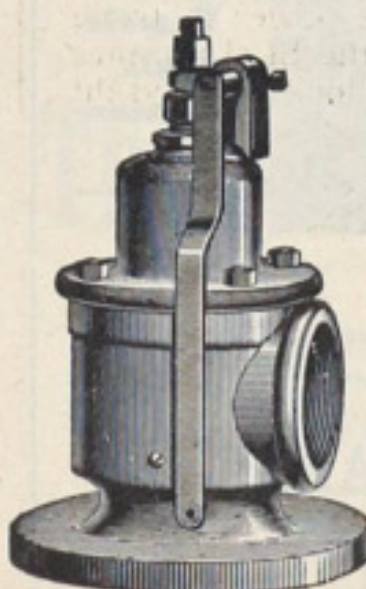
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